

#4

Fig. 1

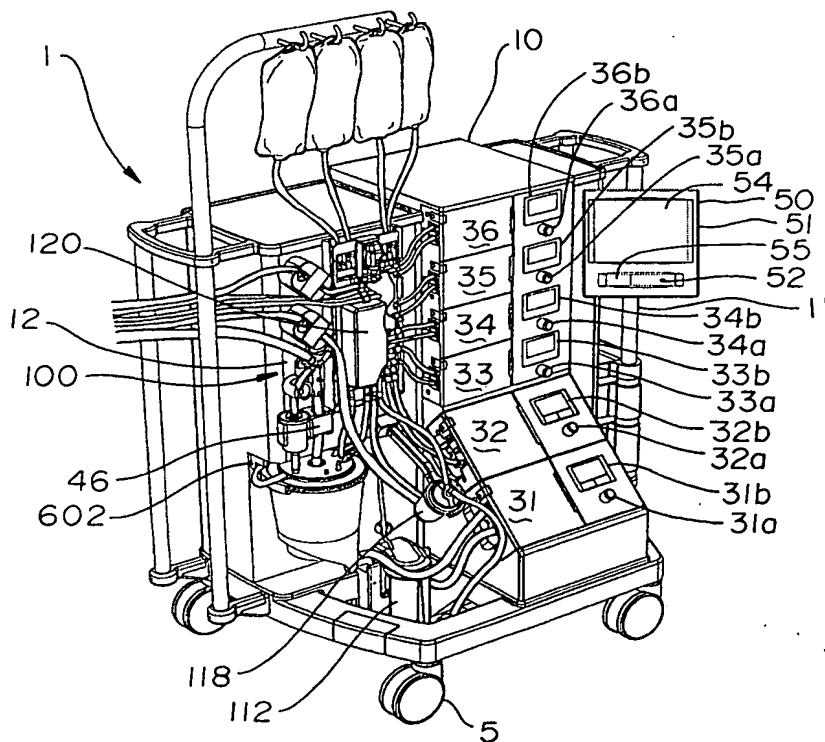


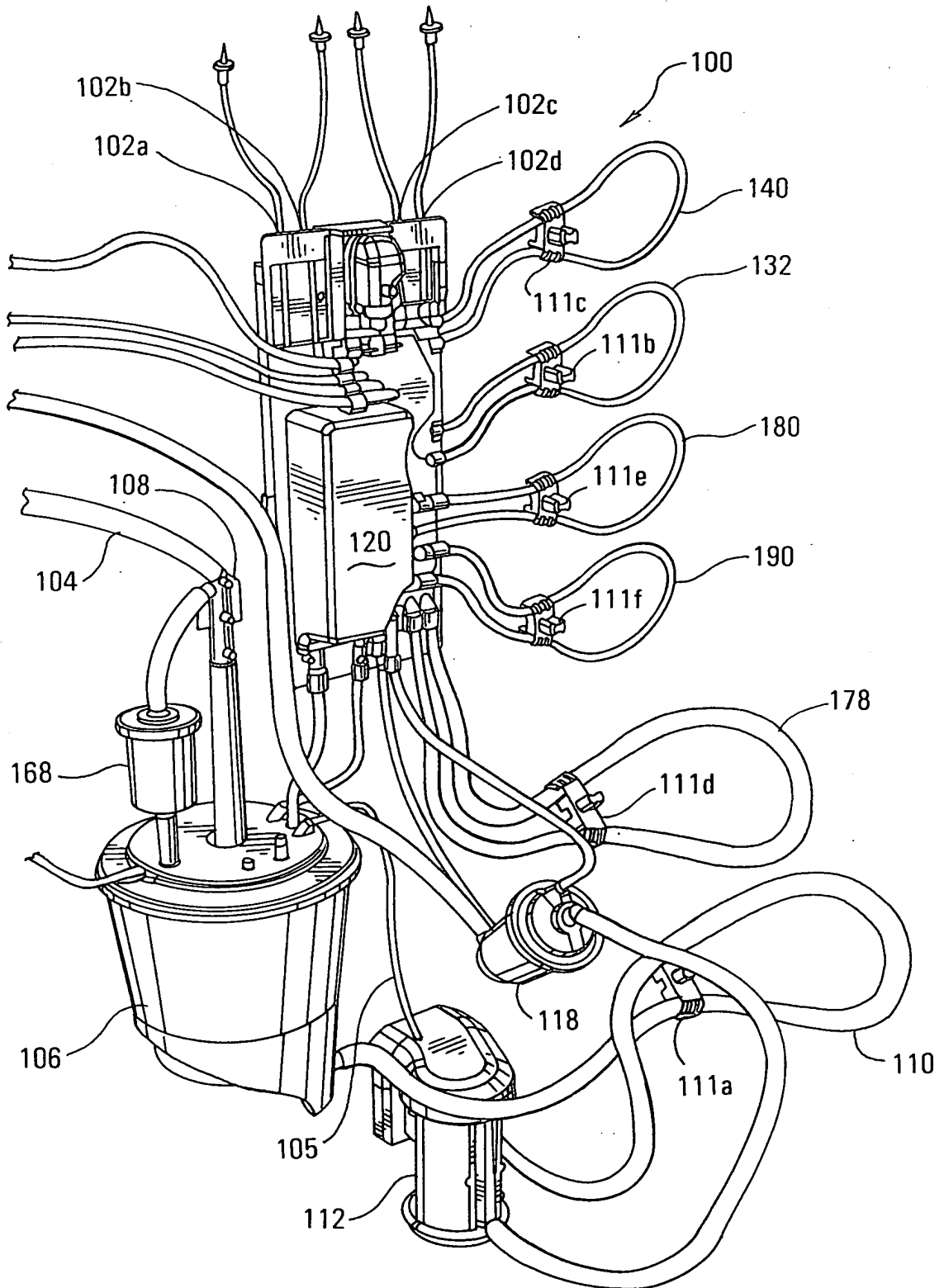
Fig. 2A

Fig. 2B

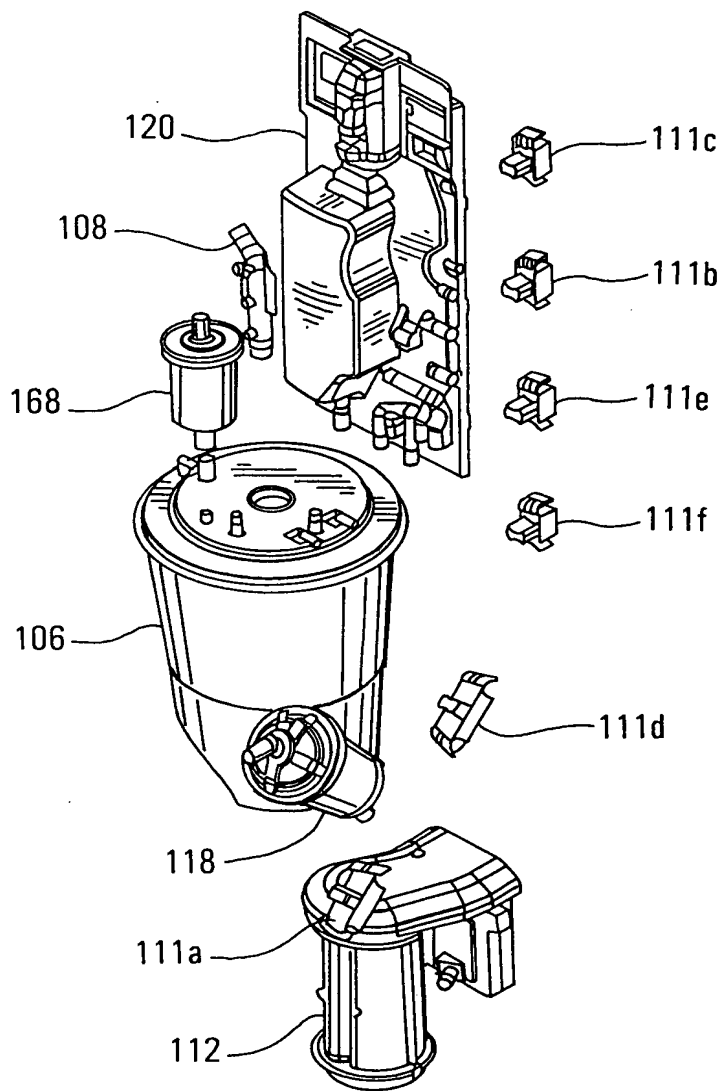


Fig.3A

| | |
|------------------------|------------------------|
| <i>Fig.3A-1</i> | <i>Fig.3A-2</i> |
| <i>Fig.3A-3</i> | <i>Fig.3A-4</i> |

Fig.3B

| | |
|------------------------|------------------------|
| <i>Fig.3B-1</i> | <i>Fig.3B-2</i> |
| <i>Fig.3B-3</i> | <i>Fig.3B-4</i> |

Fig.3B-1

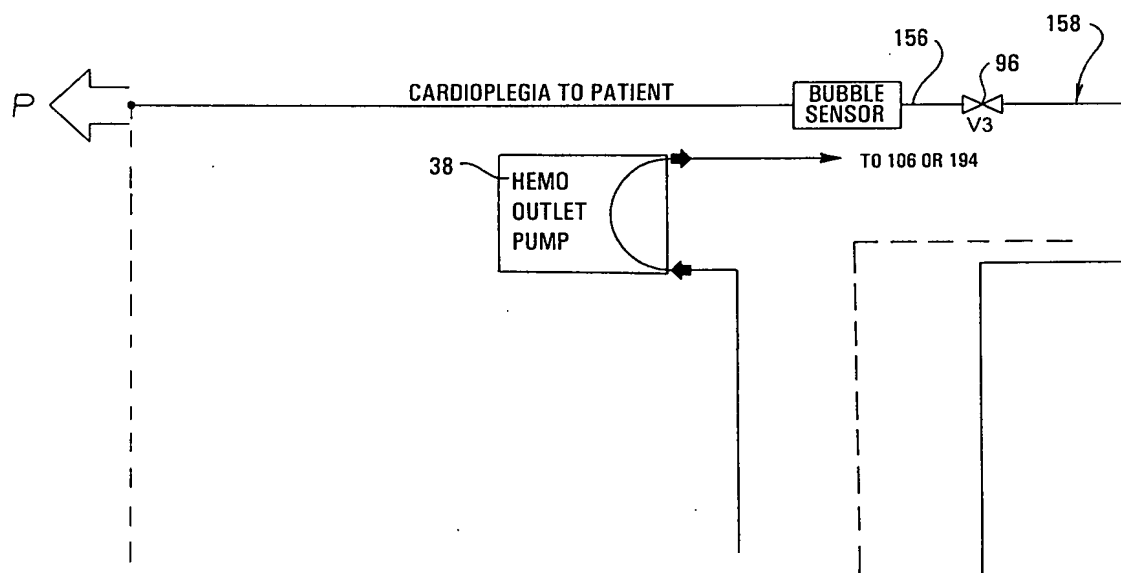


Fig.3B-2

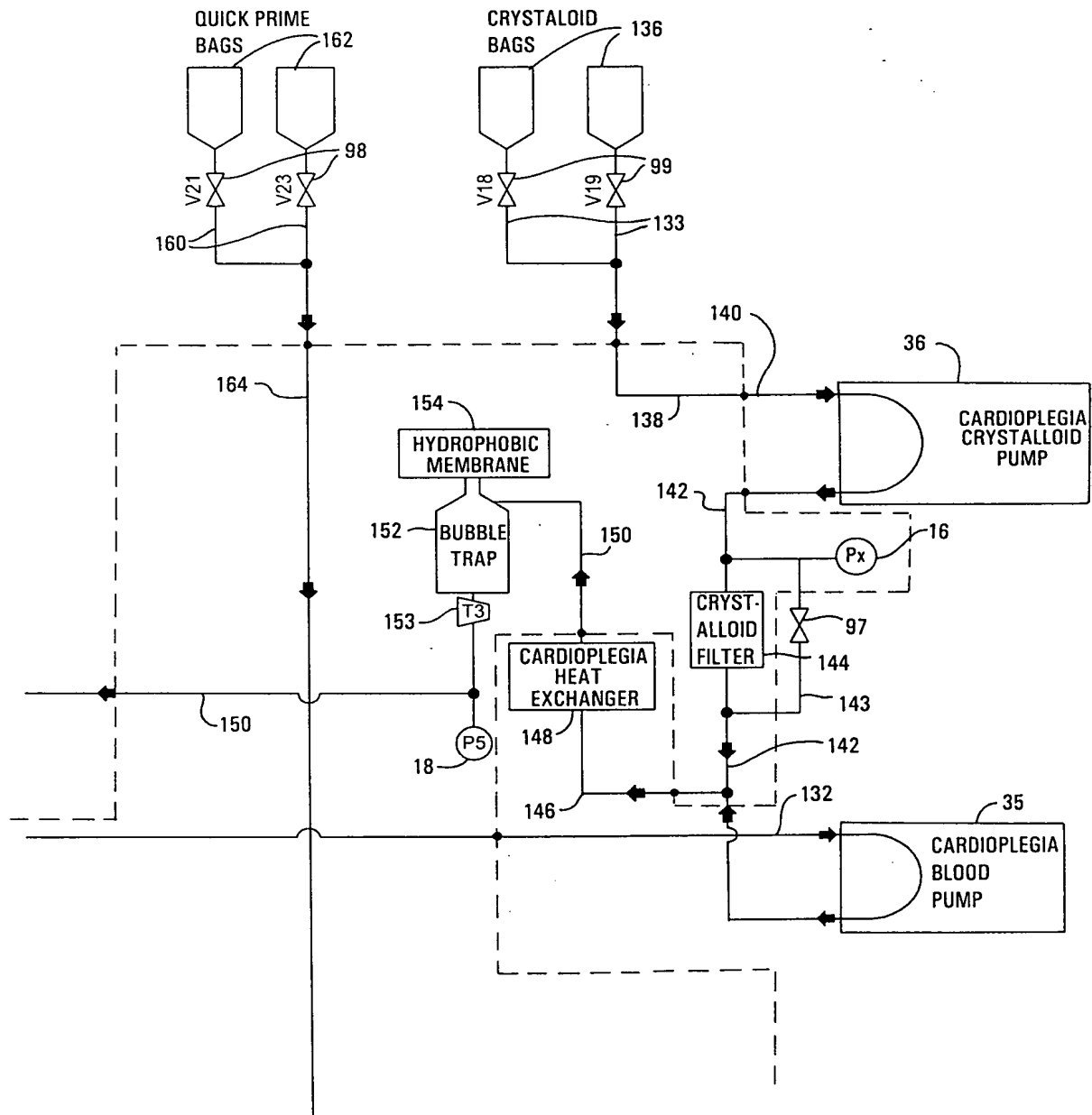


Fig.3B-4

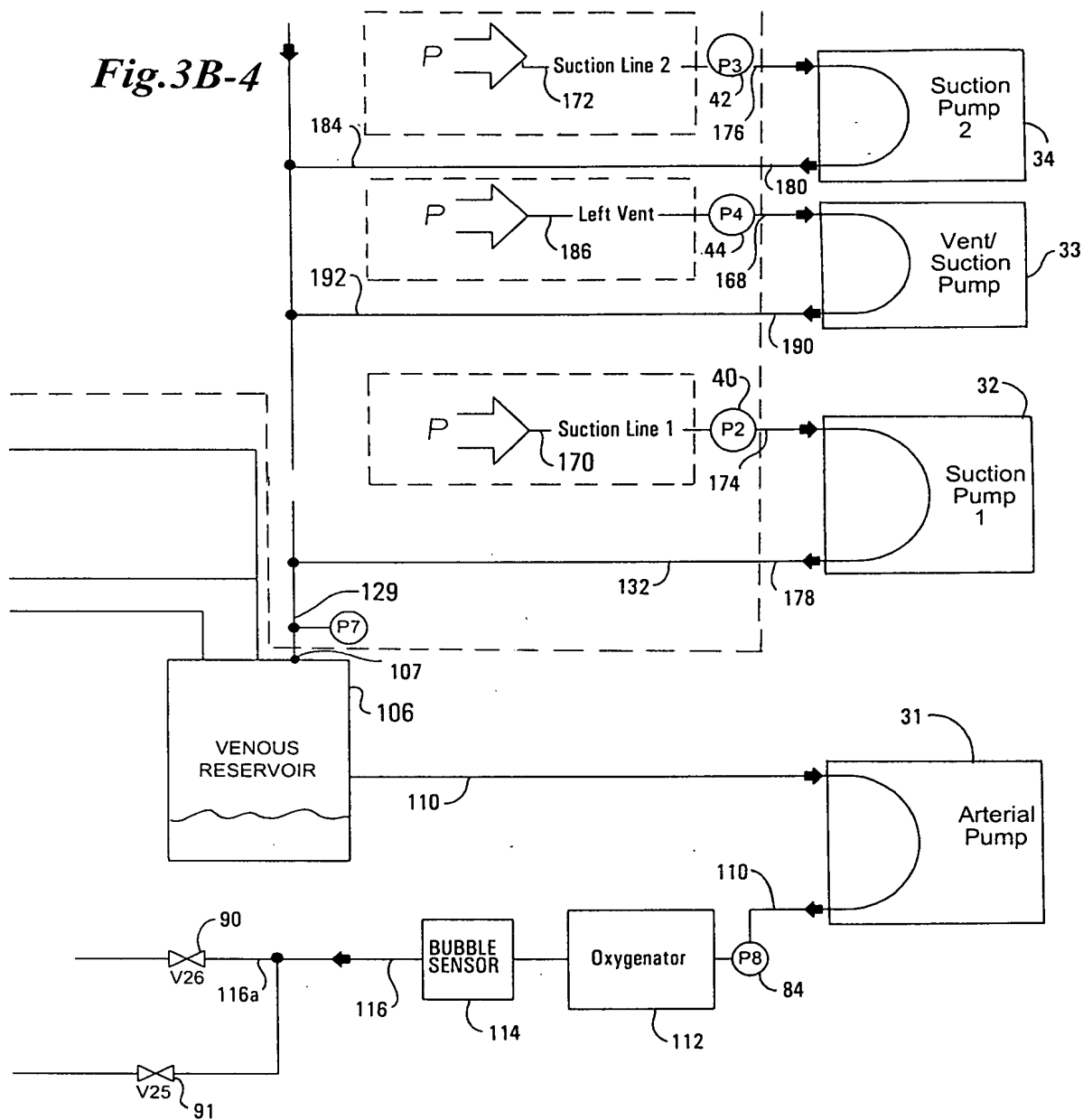
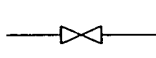


Fig. 3A-1

 = STOPCOCK

 = AUTOMATIC VALVE

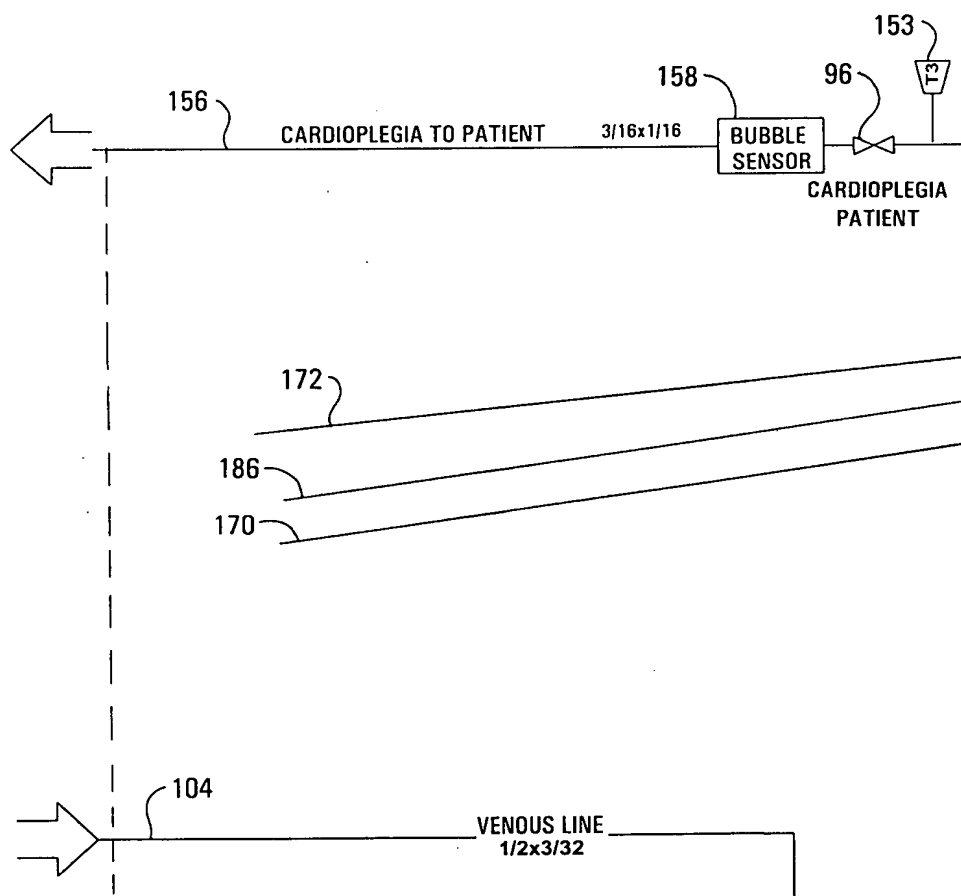


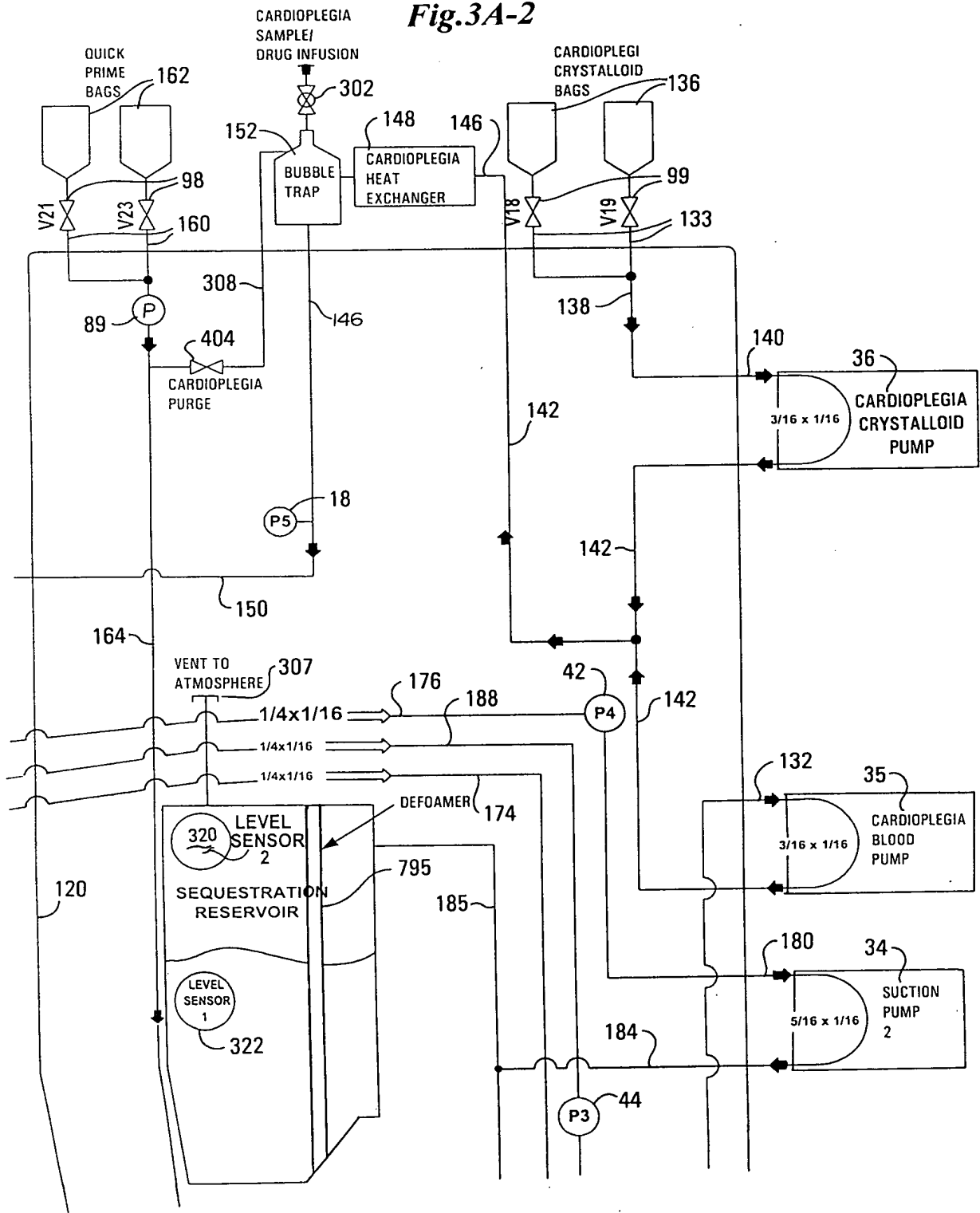
Fig.3A-2

Fig.3A-3

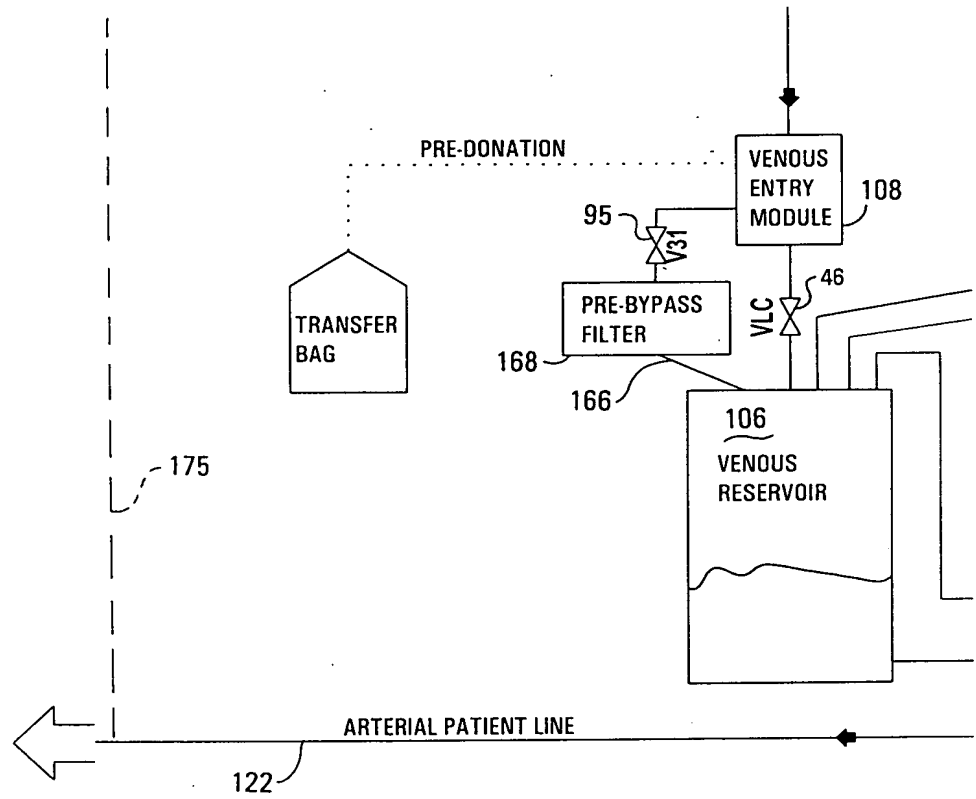


Fig. 3A-4 is a schematic diagram of a blood pump system. The system includes two parallel pumps, 33 (VENT/SUCTION PUMP) and 32 (SUCTION PUMP X1), which draw blood from a common source (119b) through a CARDIOPLEGIA BLOOD ACCESS (128). The blood is then pumped through a series of components: an ARTERIAL HEOCONC/SAMPLE XFER BAG (310), a pump (P1), an ARTERIAL FILTER, and an ARTERIAL PATIENT OXYGENATOR VENT (105). The blood then flows through a BUBBLE SENSOR (126) and a T2 sensor (88) before entering the main arterial line (110). The system also includes an OXYGENATOR HEAT EXCHANGER (112) and a pump (P) (84) that draws blood from the main arterial line (110) and pumps it back into the system. The system is controlled by a SEQUESTERED BLOOD ACCESS (303) and a CARDIOPLEGIA BLOOD ACCESS (128). The main arterial line (110) is connected to the ARTERIAL PATIENT OXYGENATOR VENT (105) and the OXYGENATOR HEAT EXCHANGER (112). The system is also connected to a VENT/SUCTION PUMP (33) and a SUCTION PUMP X1 (32). The system is controlled by a SEQUESTERED BLOOD ACCESS (303) and a CARDIOPLEGIA BLOOD ACCESS (128). The main arterial line (110) is connected to the ARTERIAL PATIENT OXYGENATOR VENT (105) and the OXYGENATOR HEAT EXCHANGER (112). The system is also connected to a VENT/SUCTION PUMP (33) and a SUCTION PUMP X1 (32).

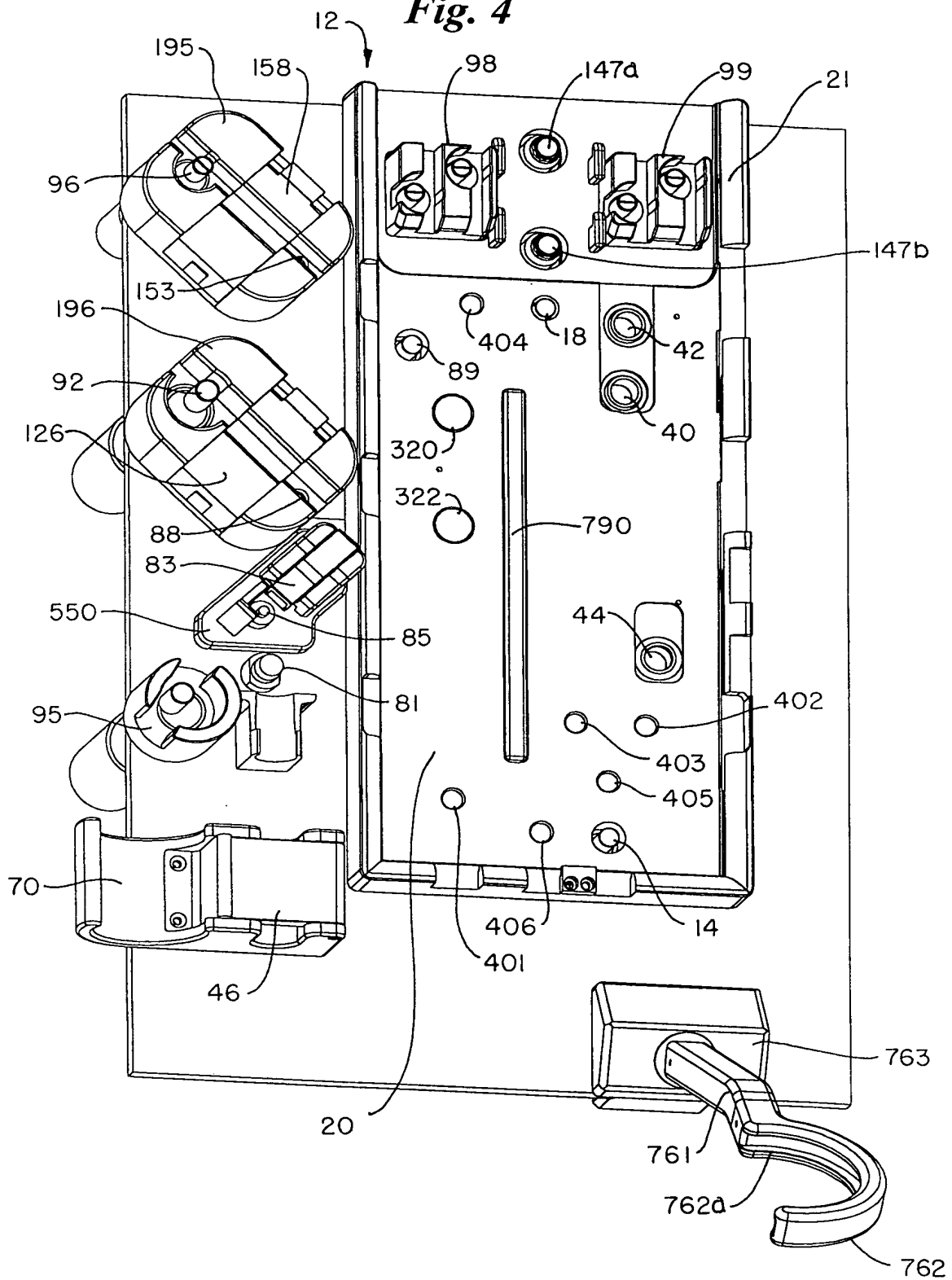
Fig. 4

Fig. 5A

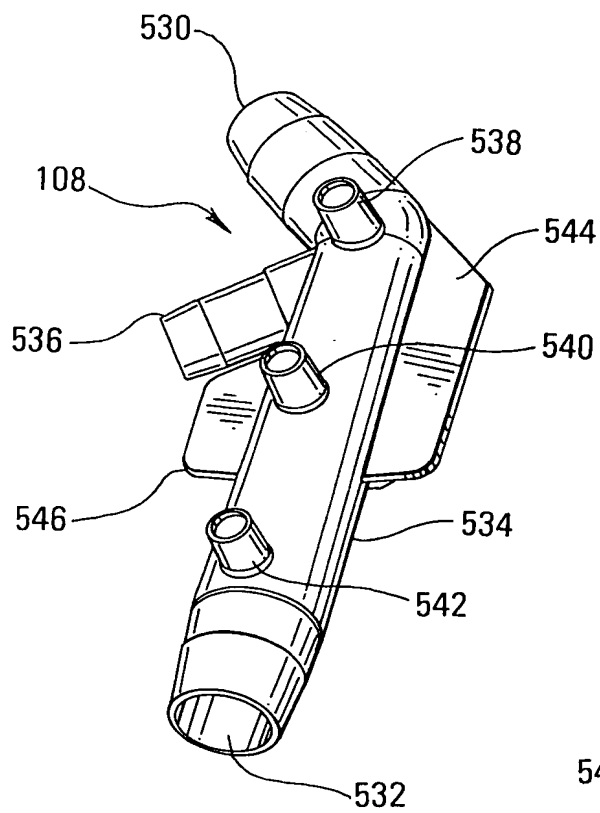


Fig. 5B

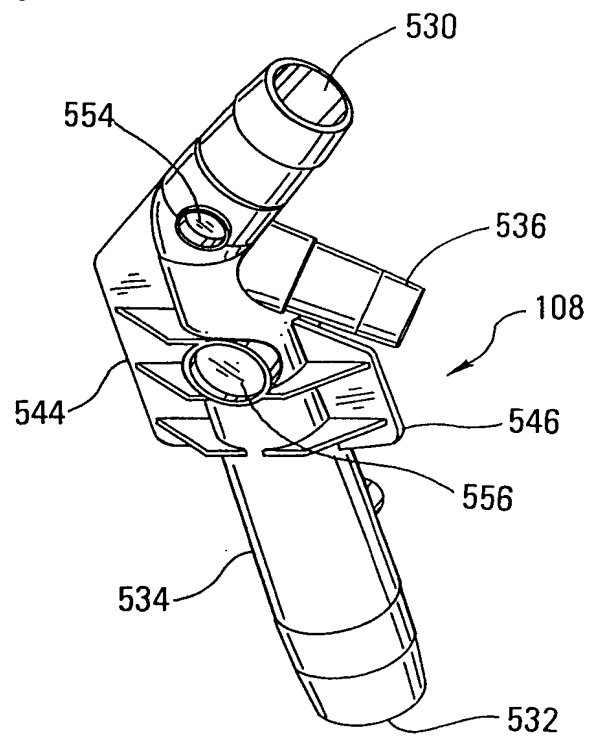


Fig. 5D

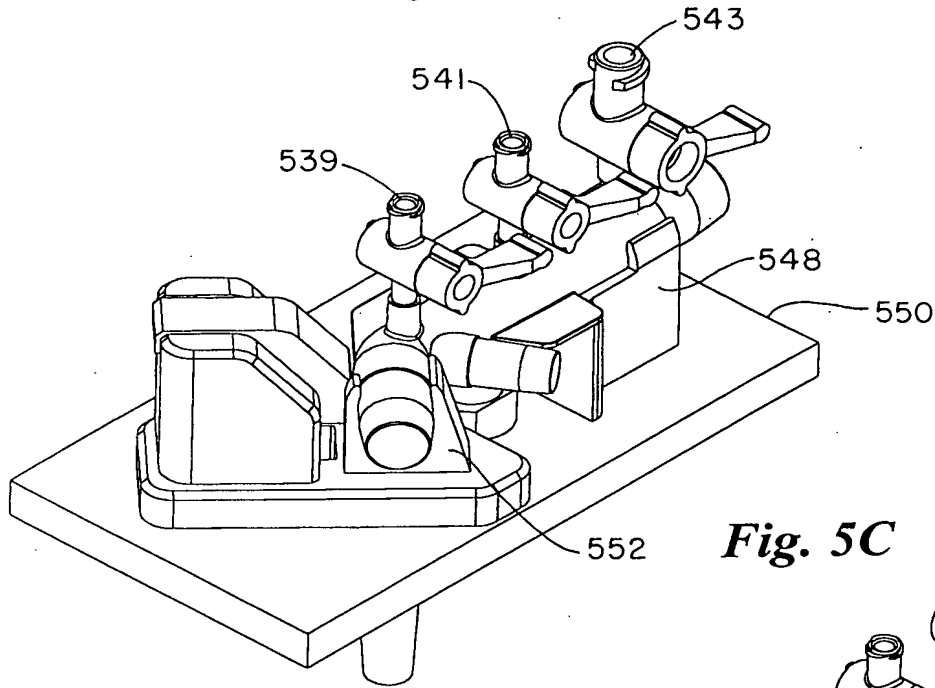


Fig. 5C

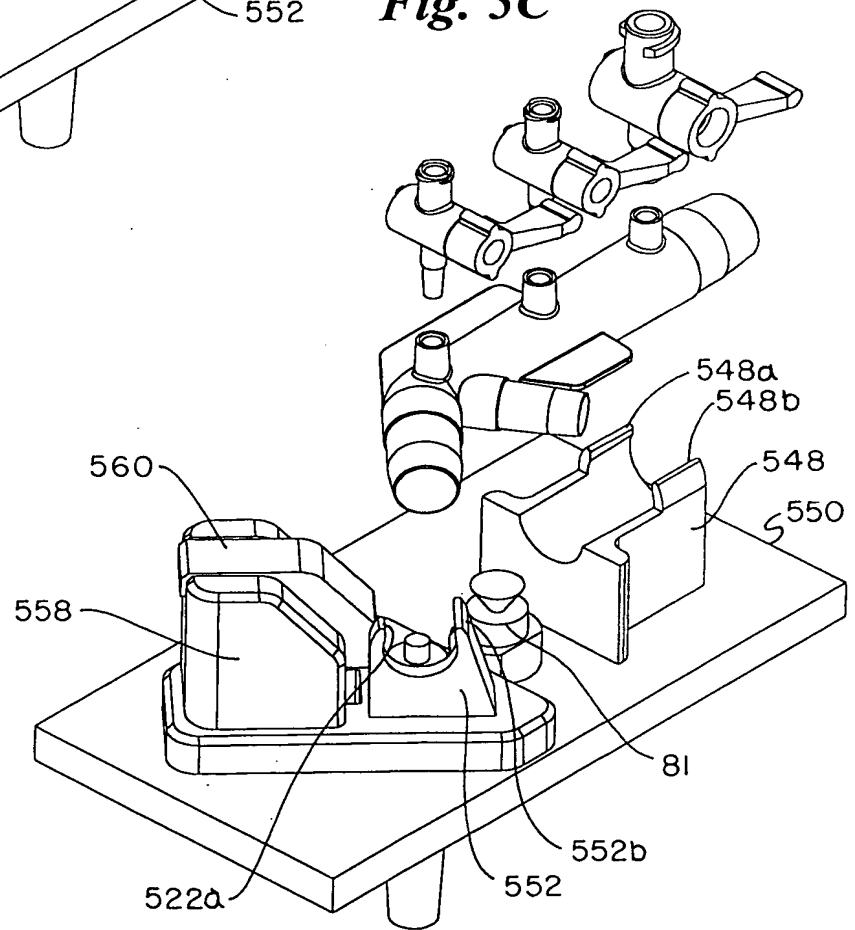


Fig. 5E

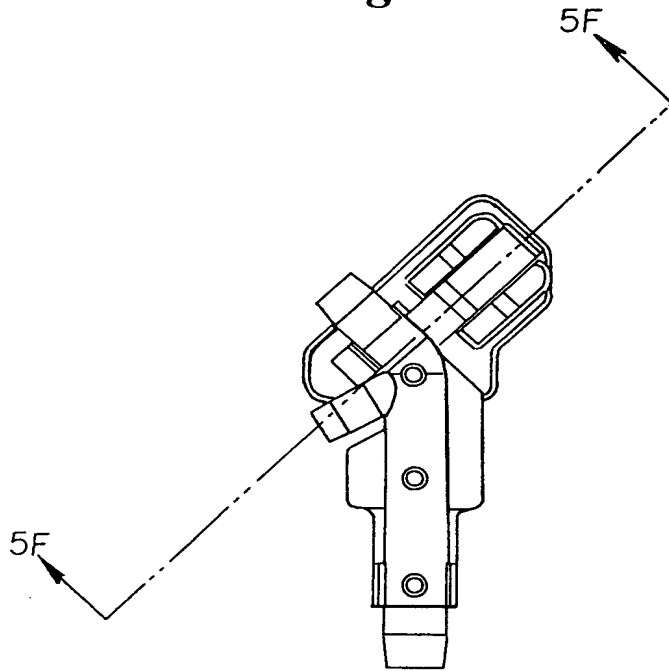


Fig. 5F

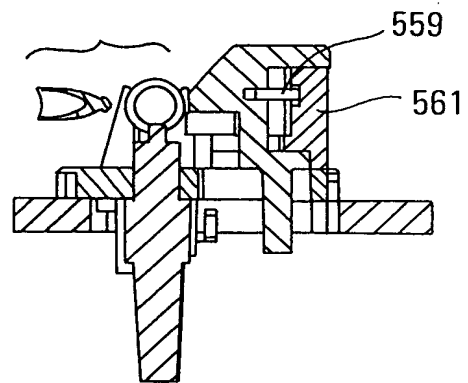


Fig. 6A

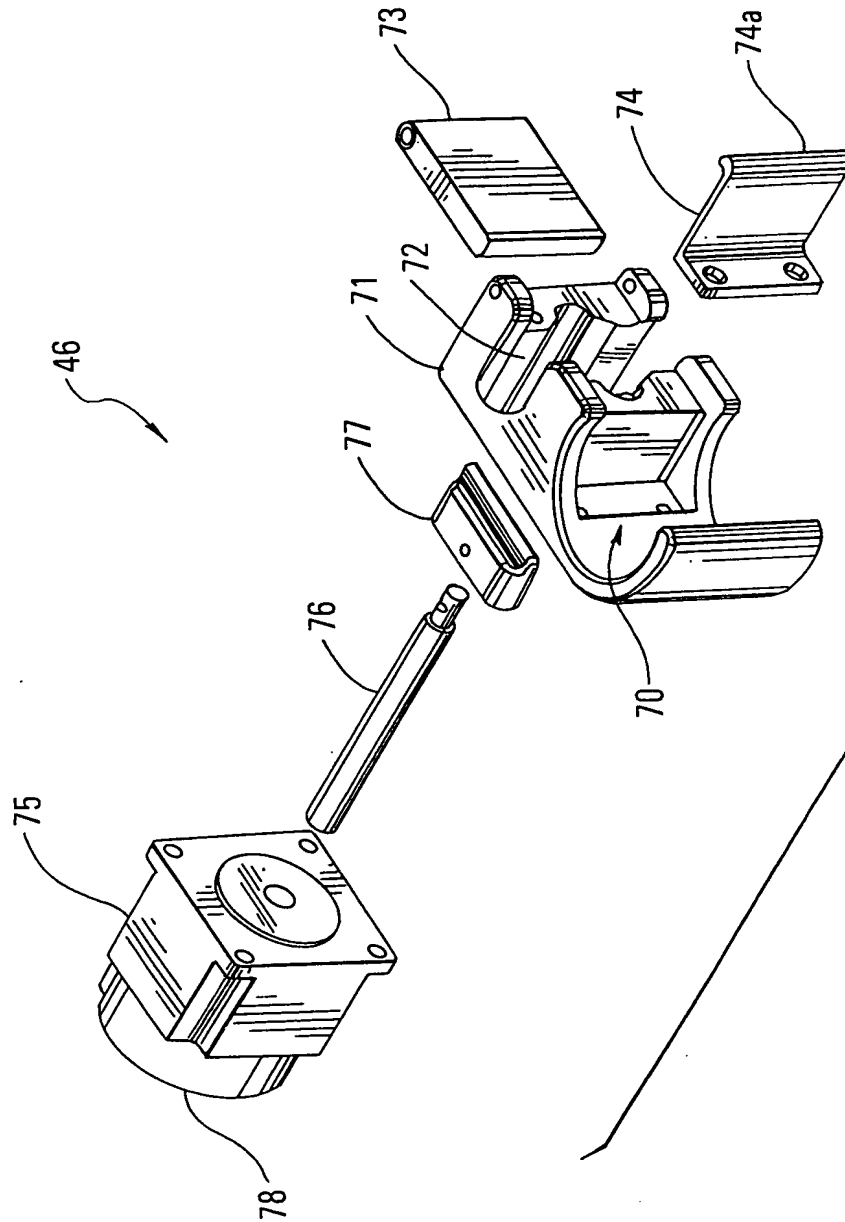


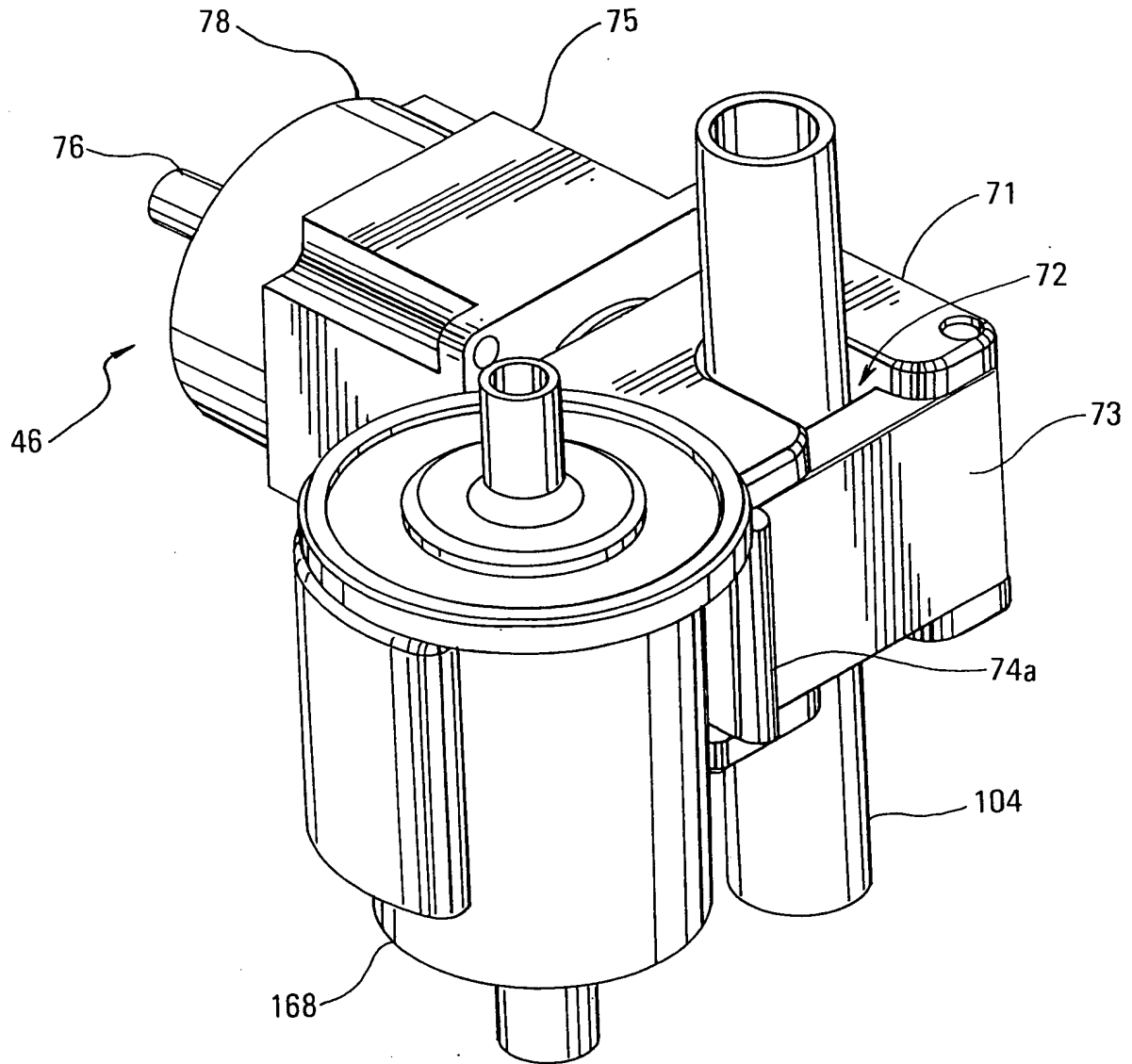
Fig. 6B

Fig. 6C

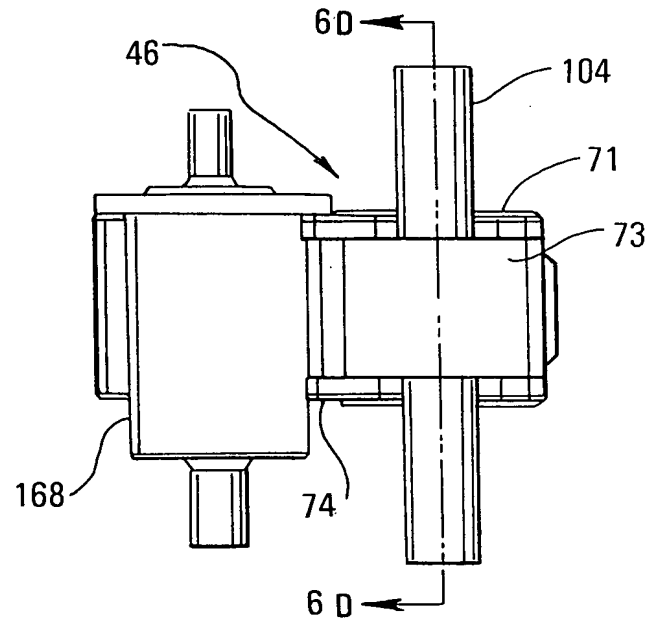


Fig. 6D

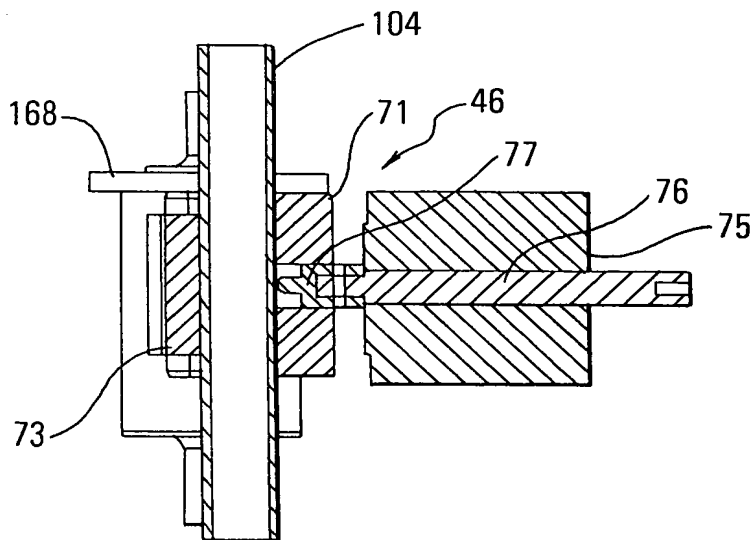


Fig. 6E

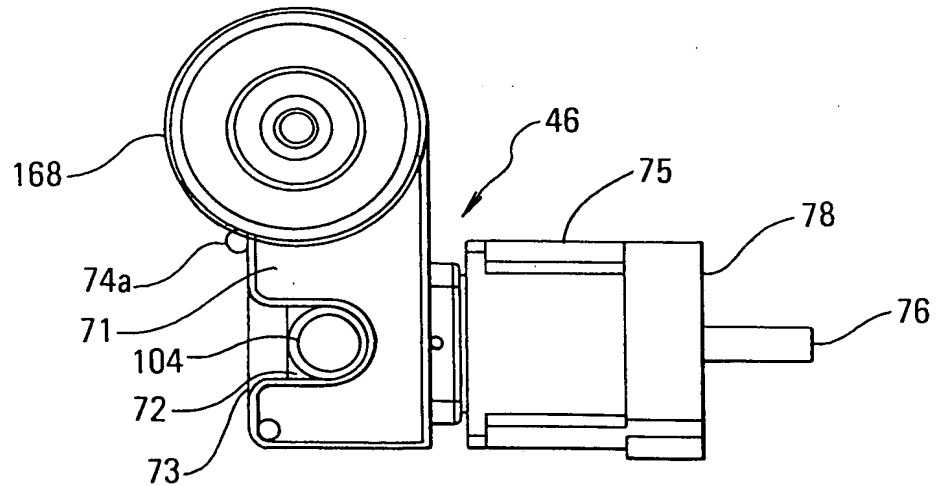


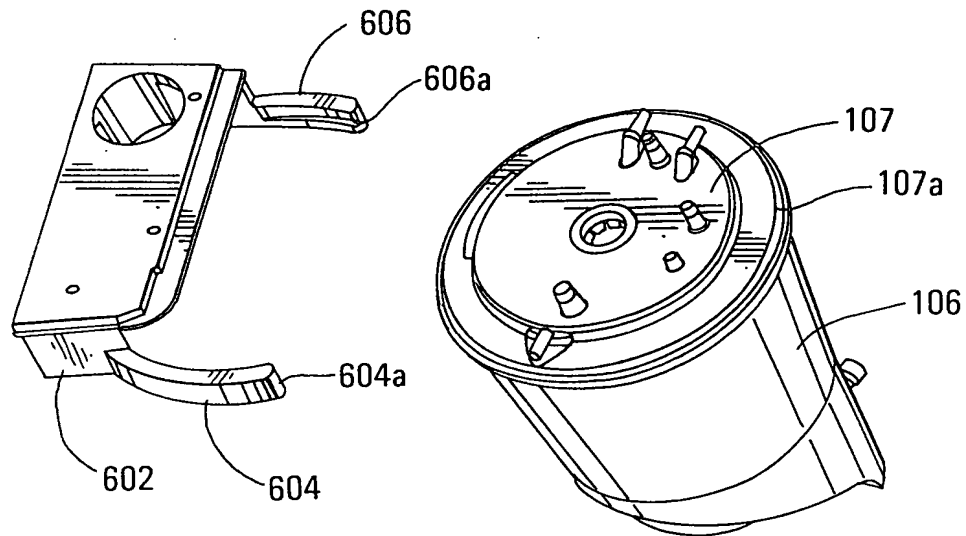
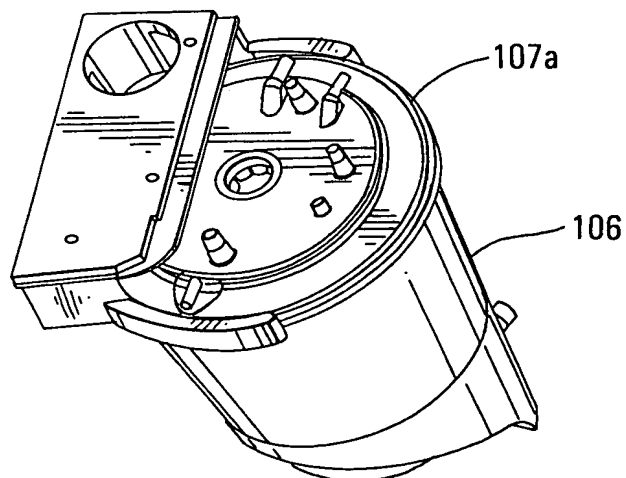
Fig. 7A*Fig. 7B*

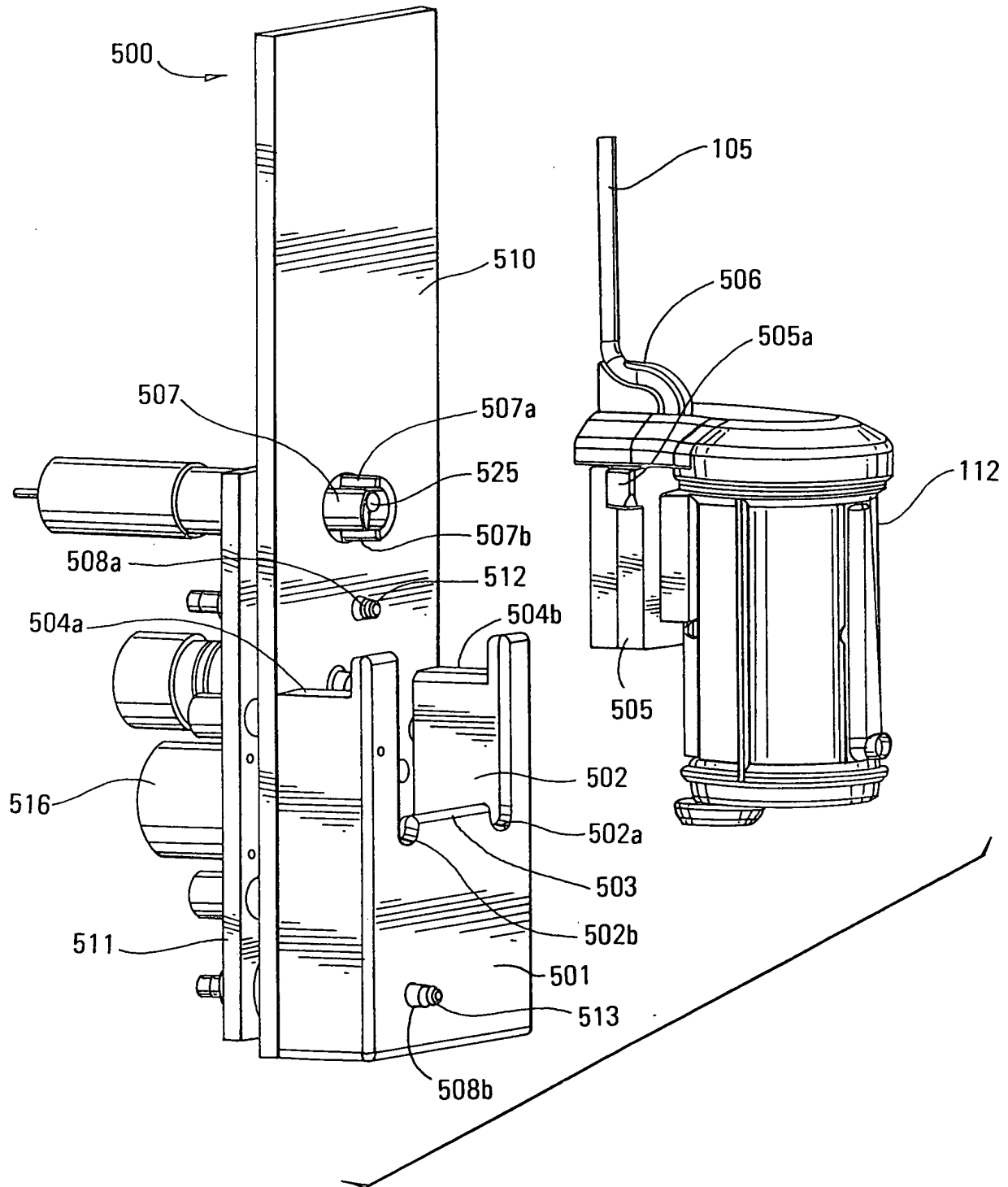
Fig. 8A

Fig. 8B

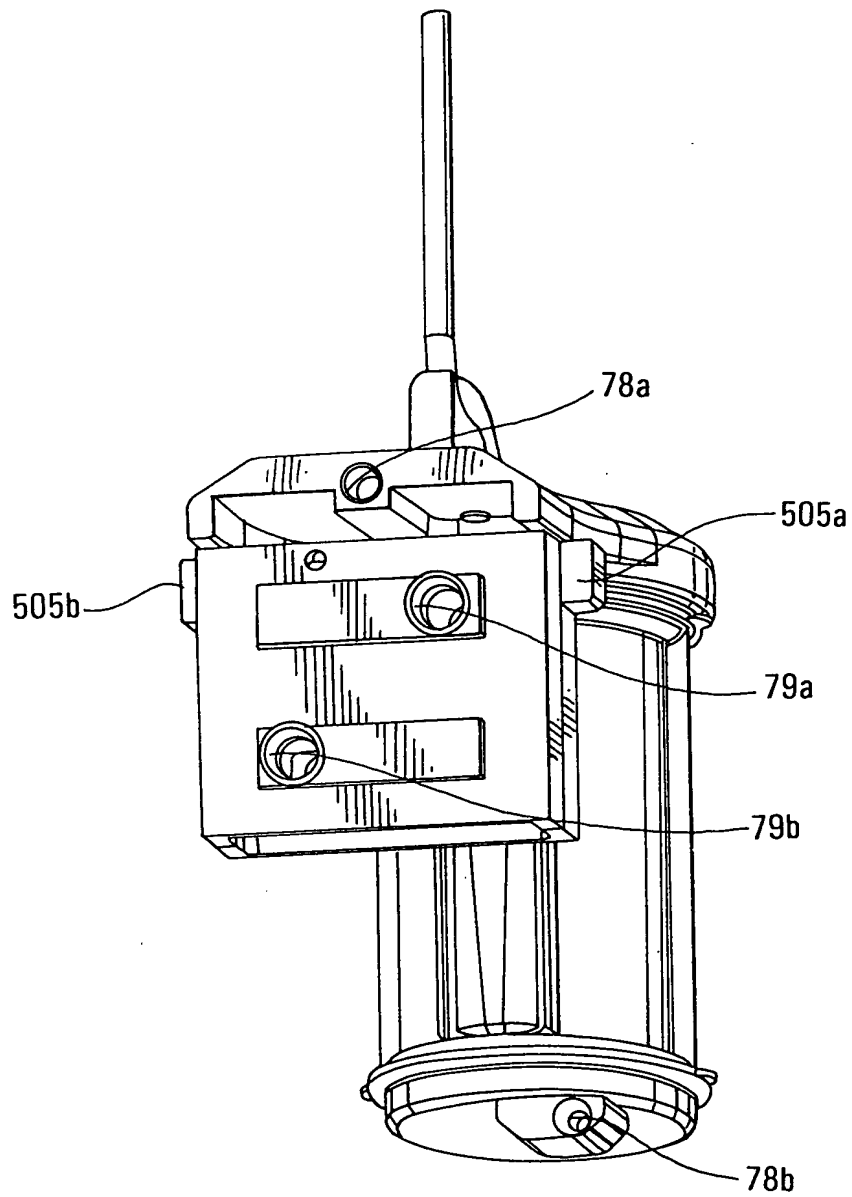


Fig. 8C

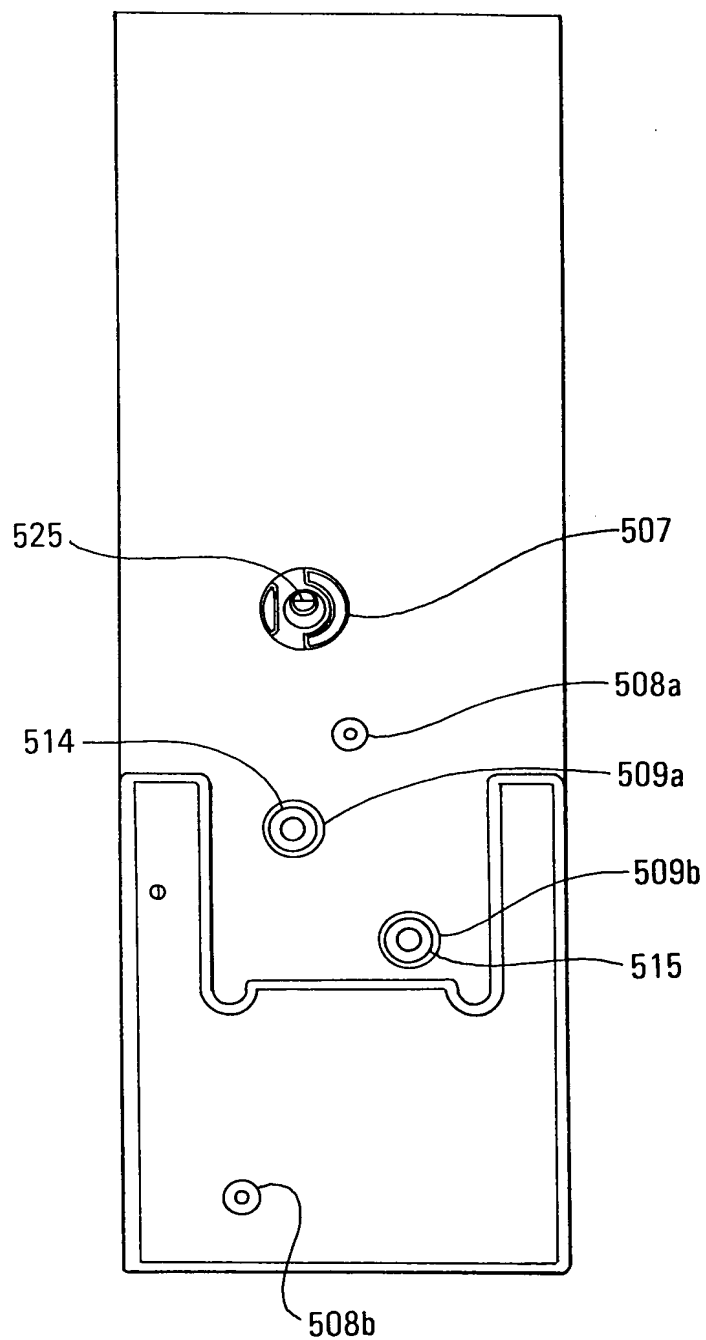


Fig. 8D

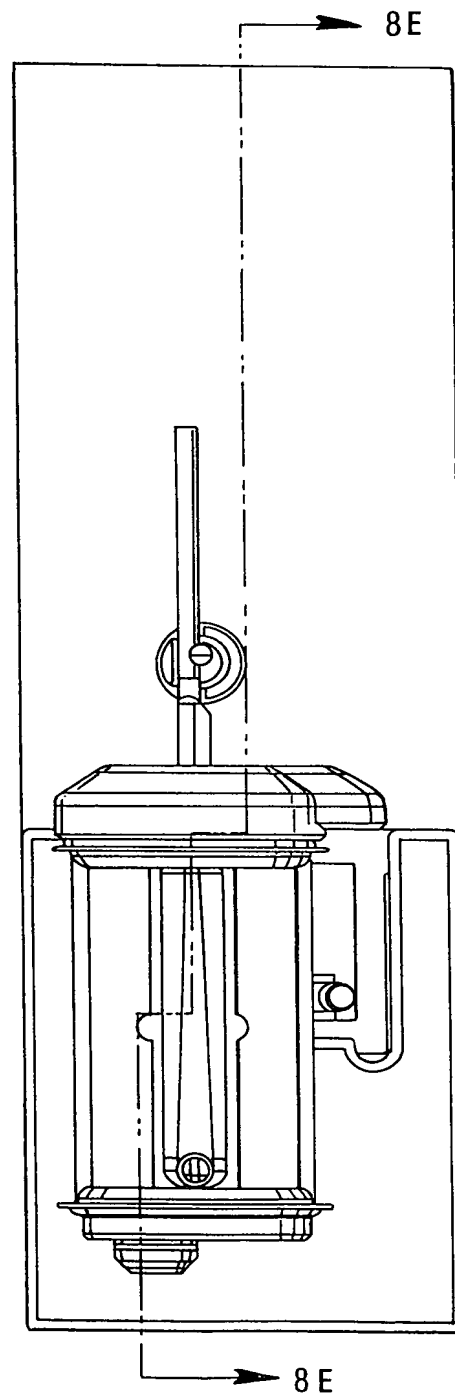


Fig. 8E

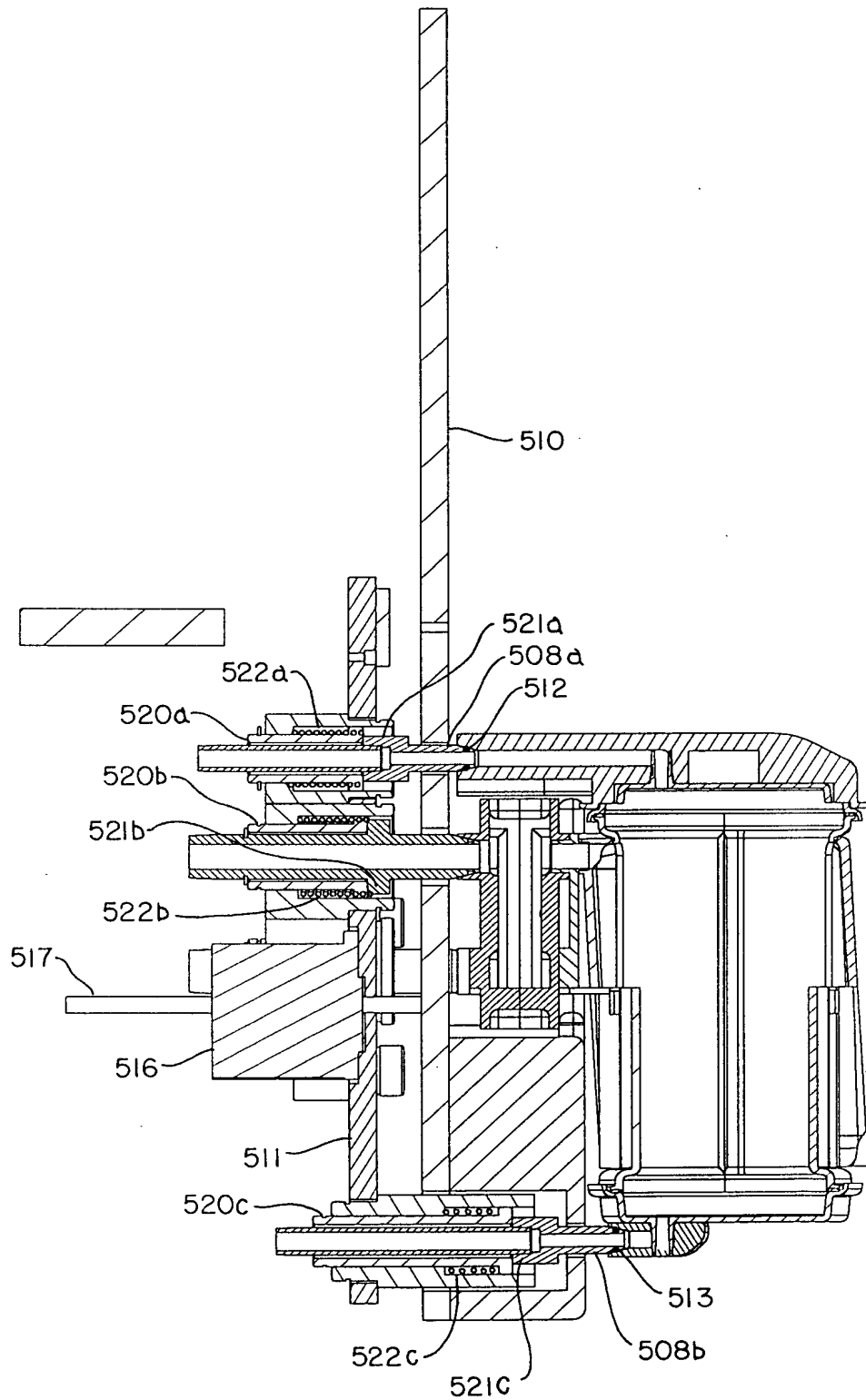


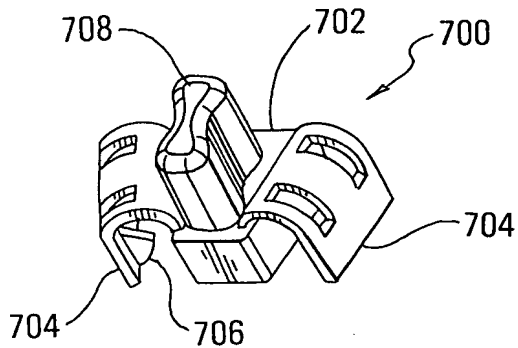
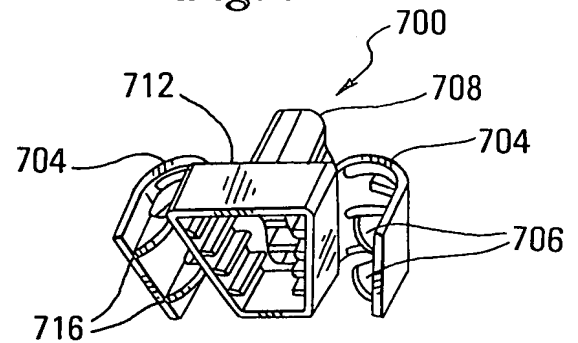
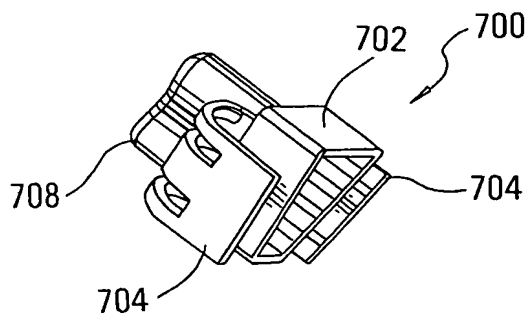
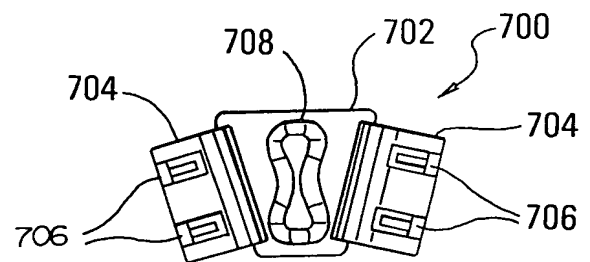
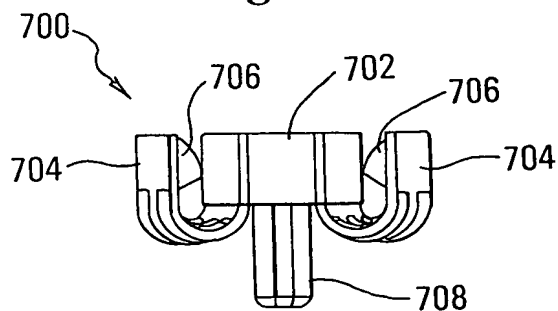
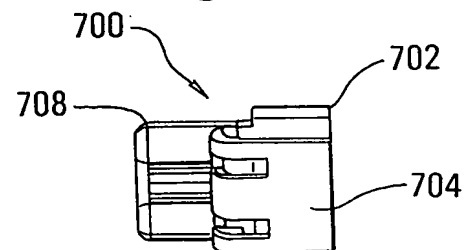
Fig. 9A*Fig. 9B**Fig. 9C**Fig. 9D**Fig. 9E**Fig. 9F*

Fig. 10B

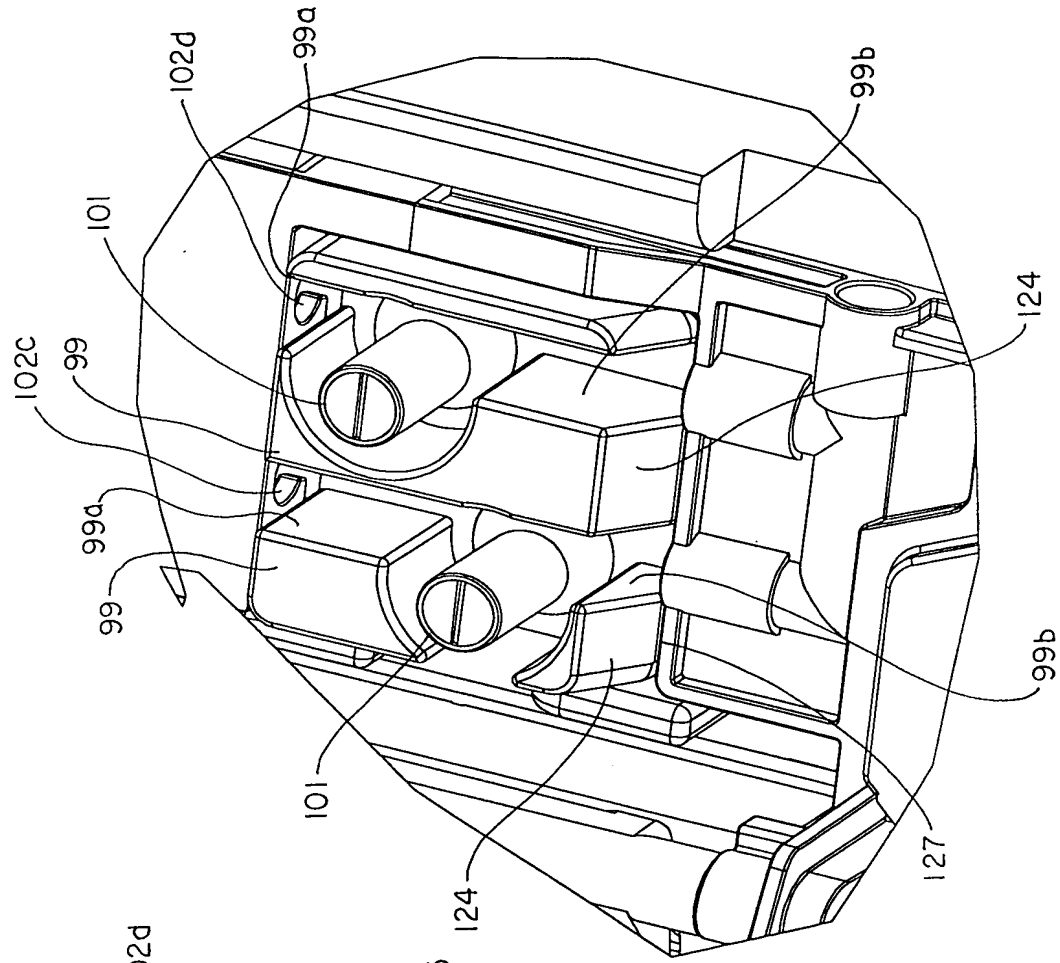


Fig. 10A

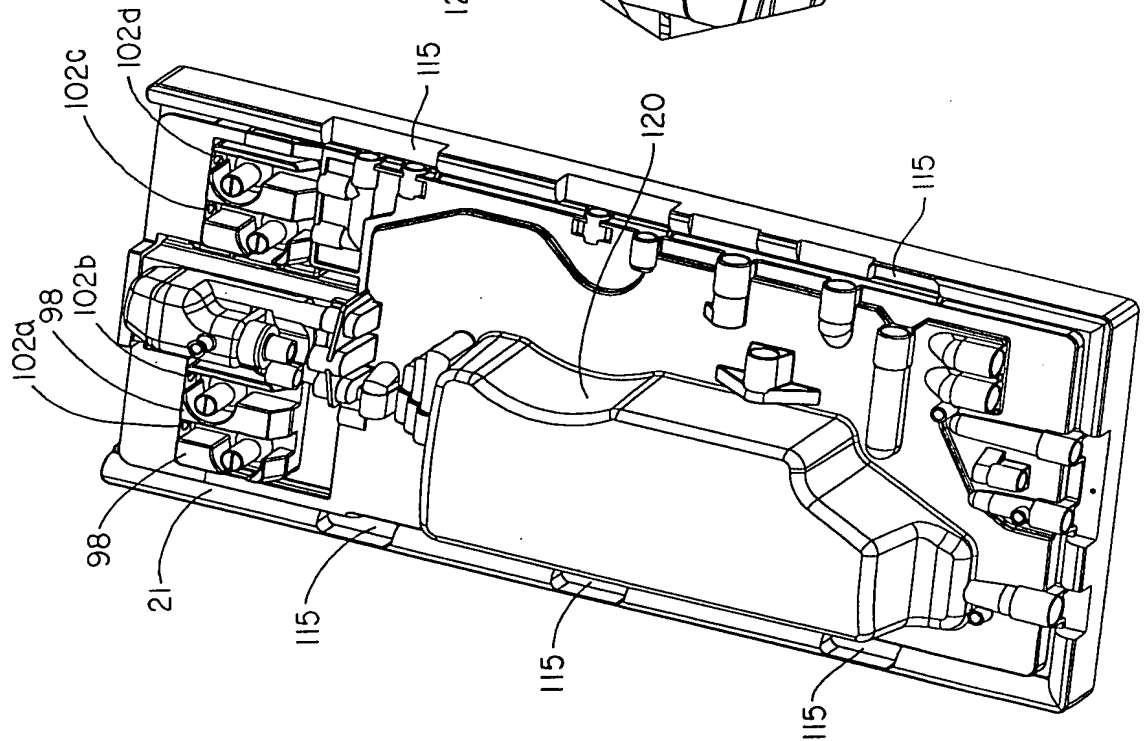


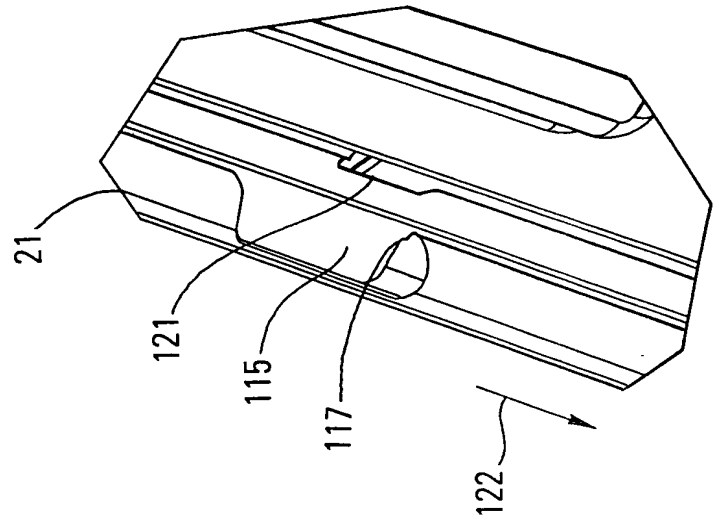
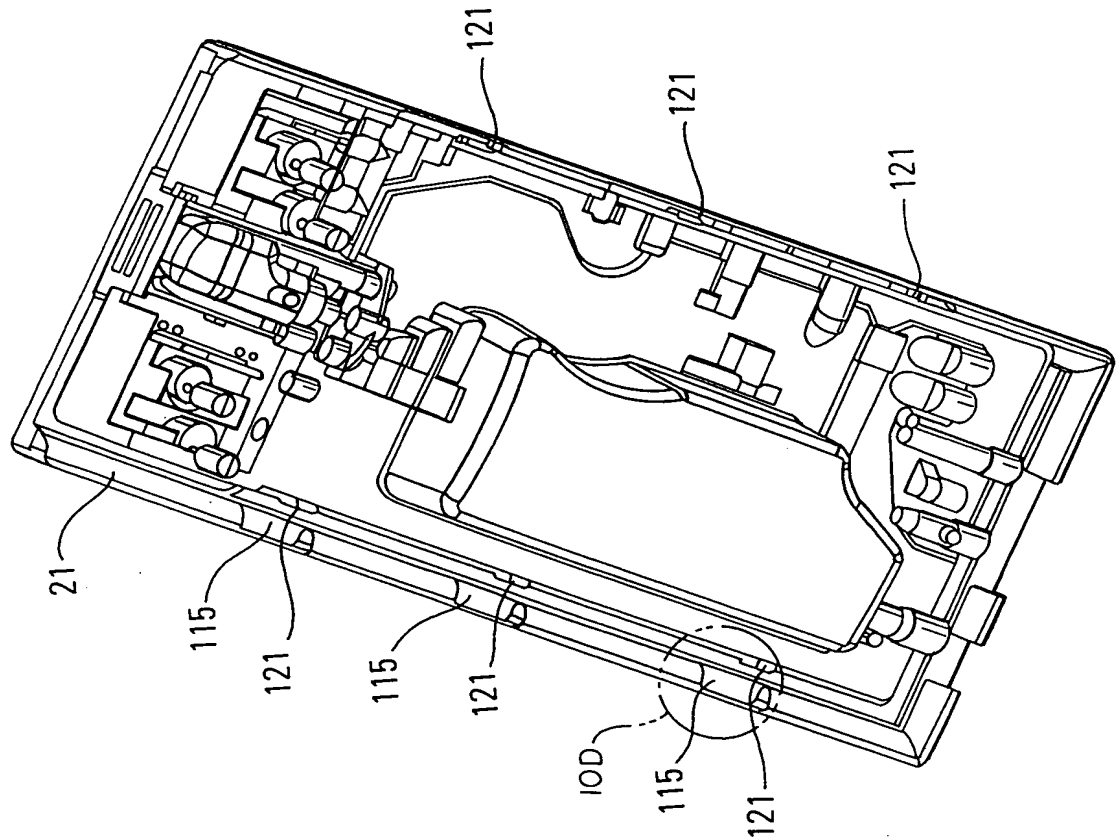
Fig. 10D*Fig. 10C*

Fig. 11

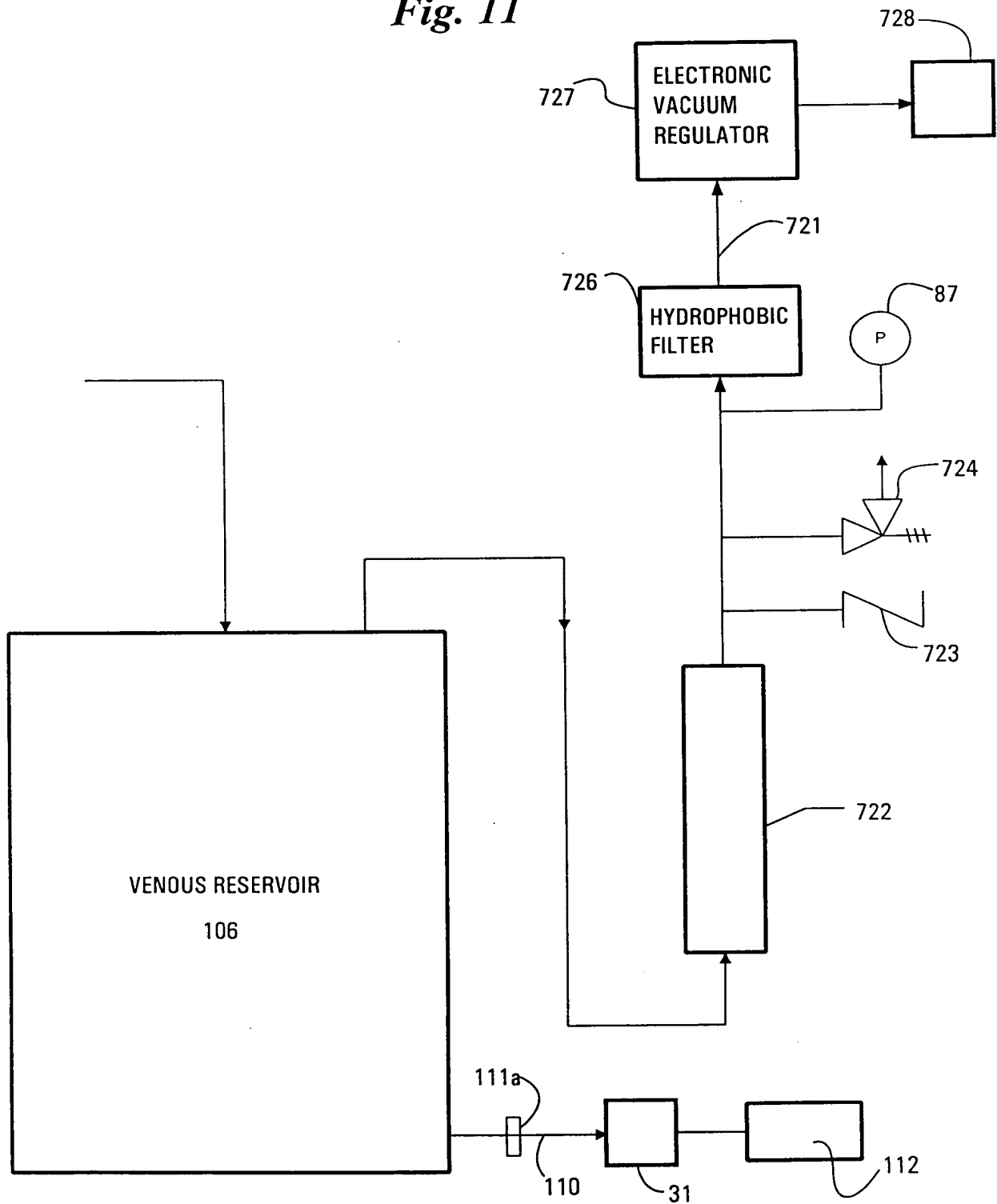


Fig. 12

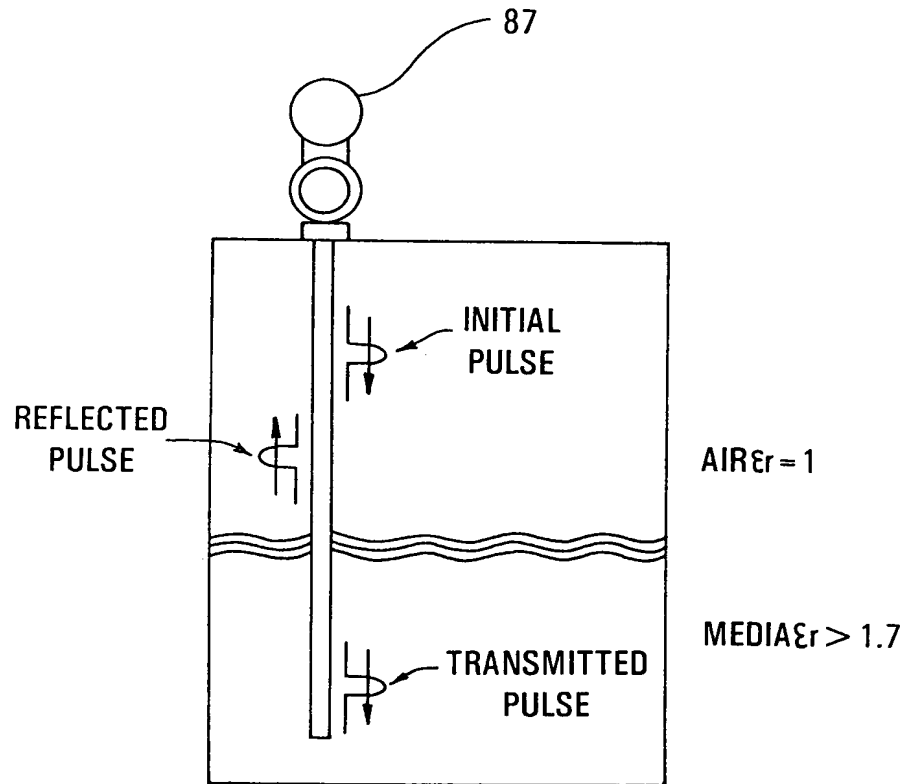


Fig. 13

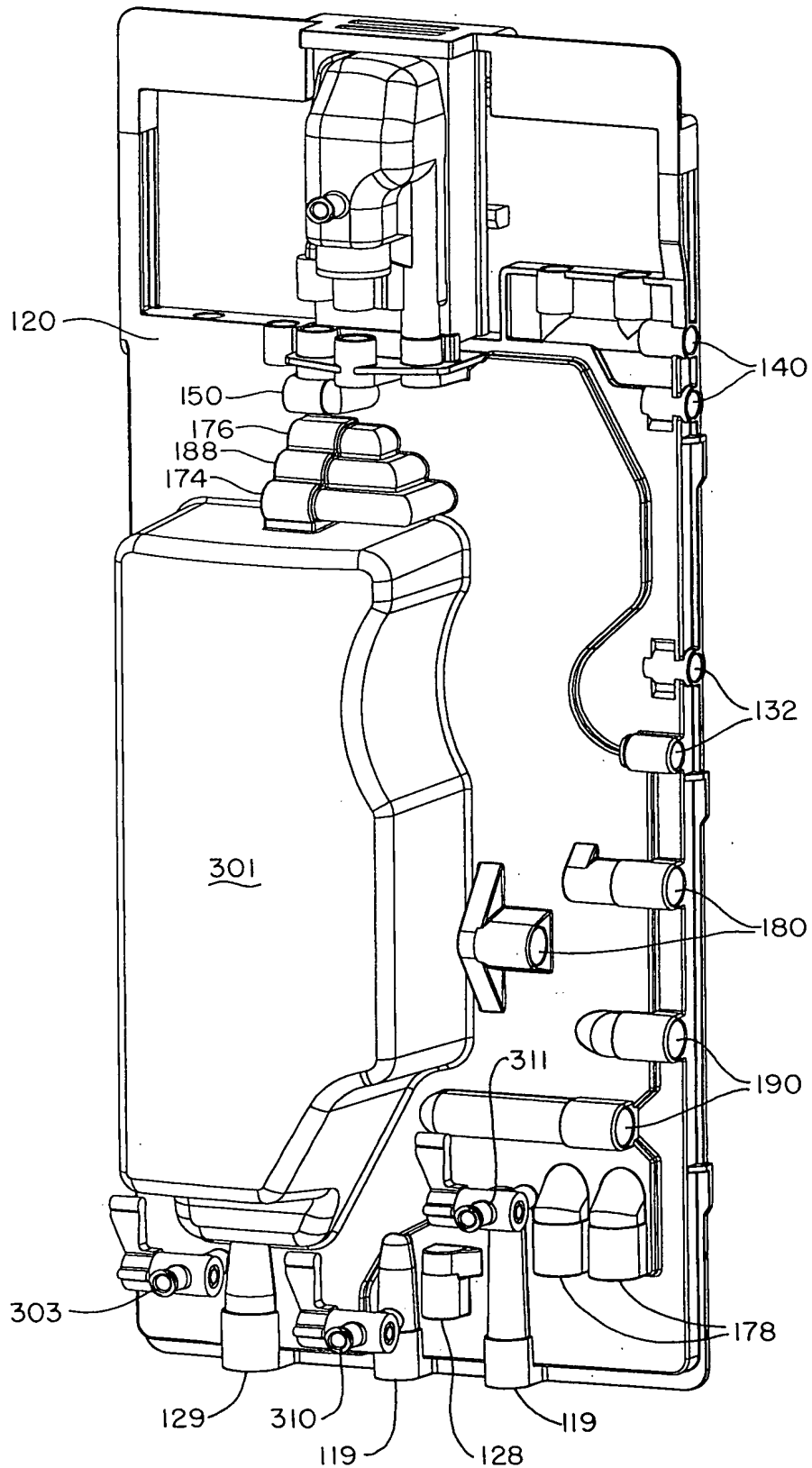


Fig. 14

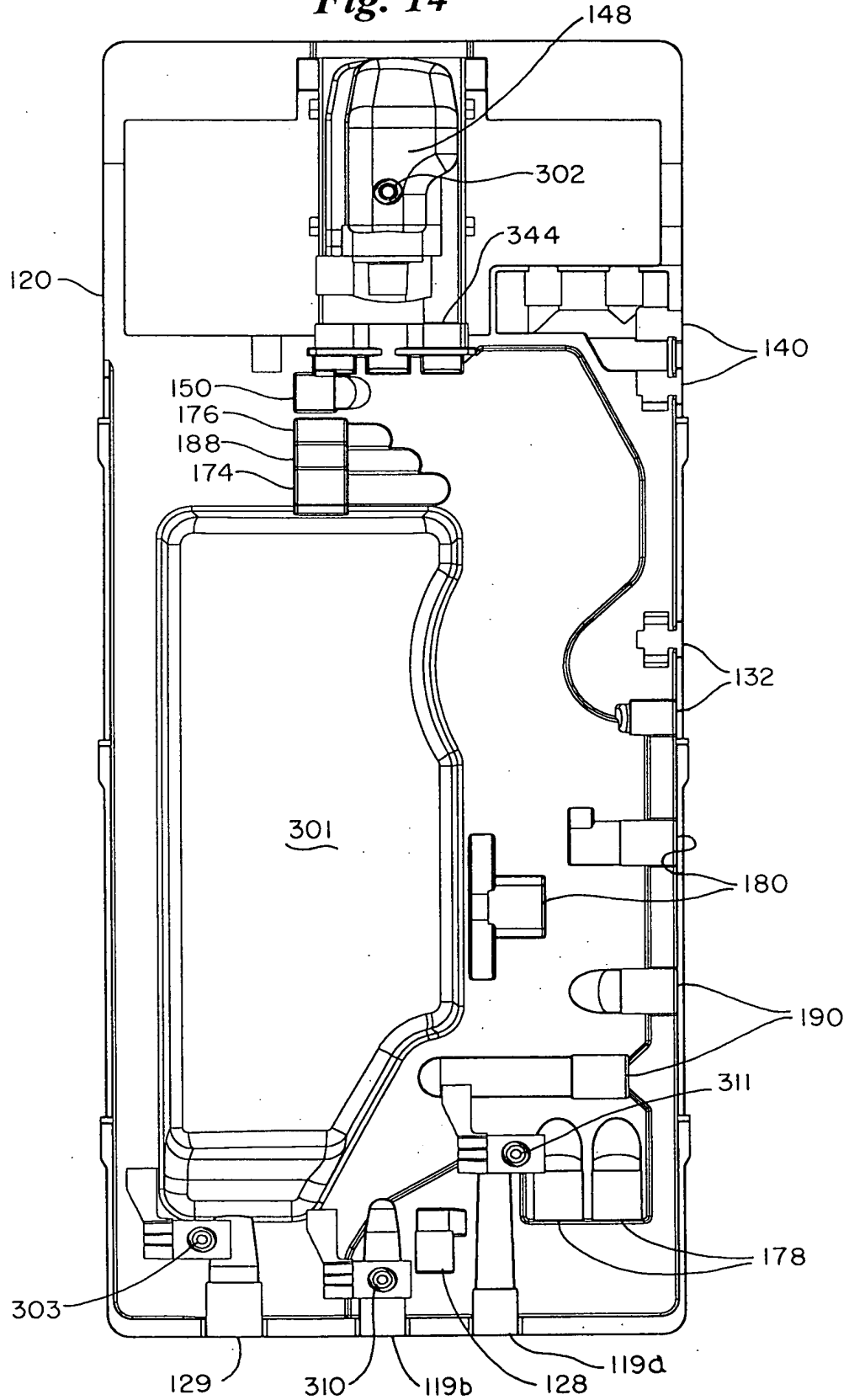


Fig. 15

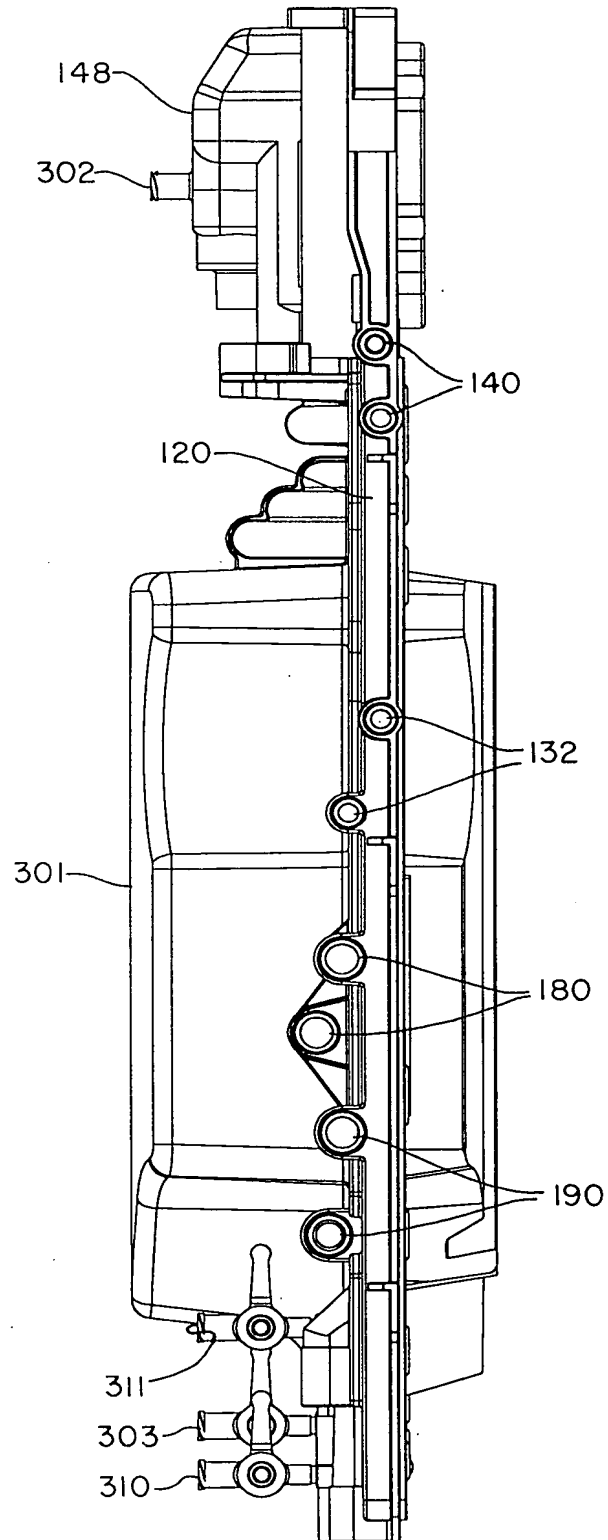


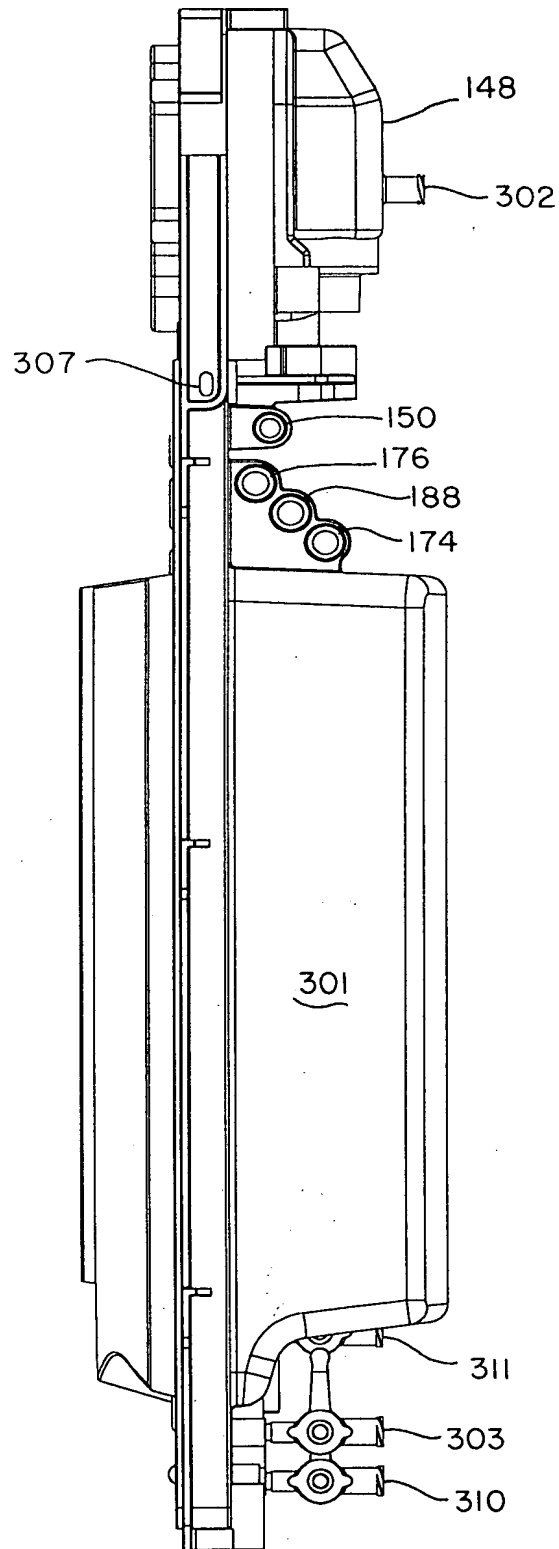
Fig. 16

Fig. 17

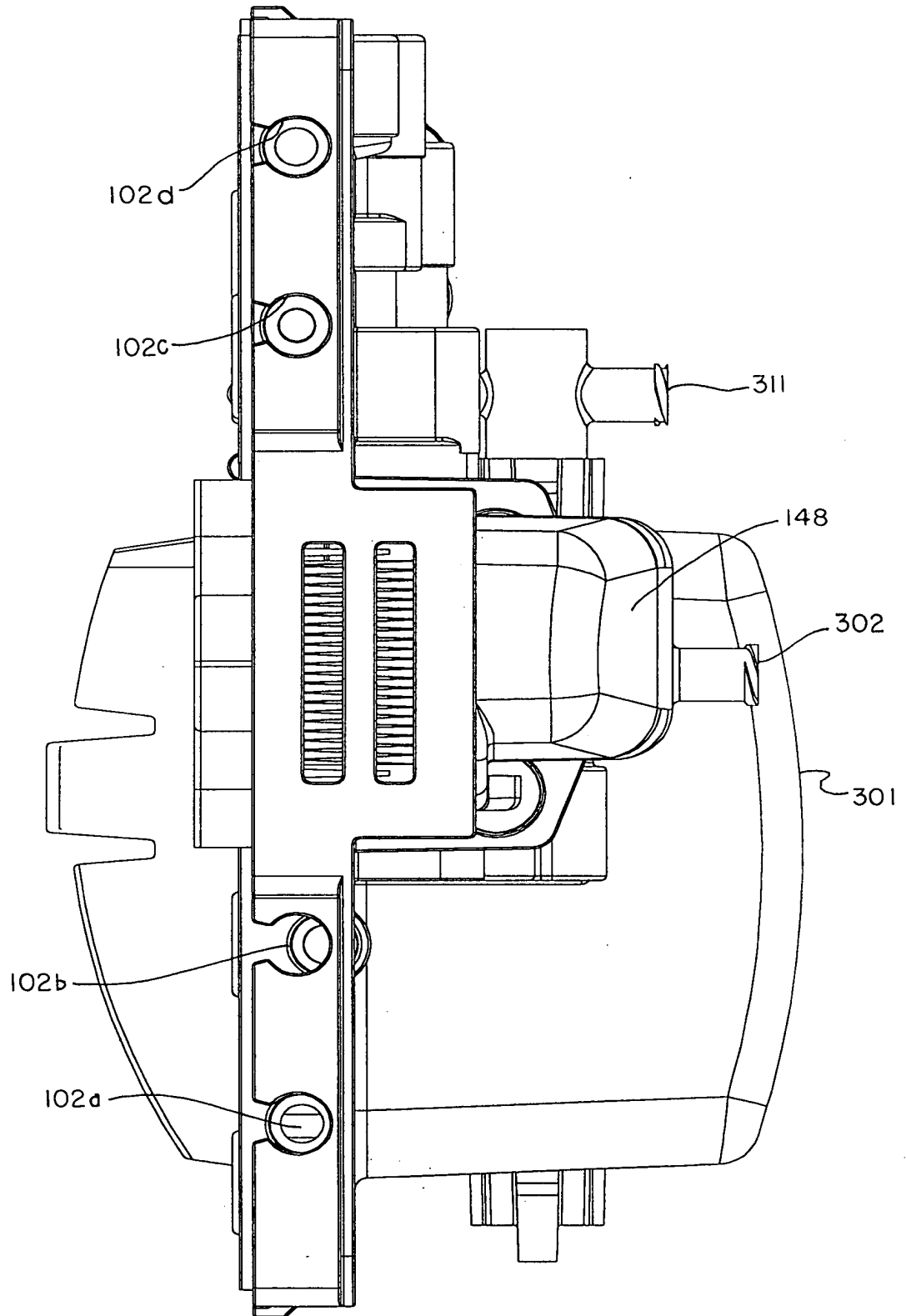


Fig. 18

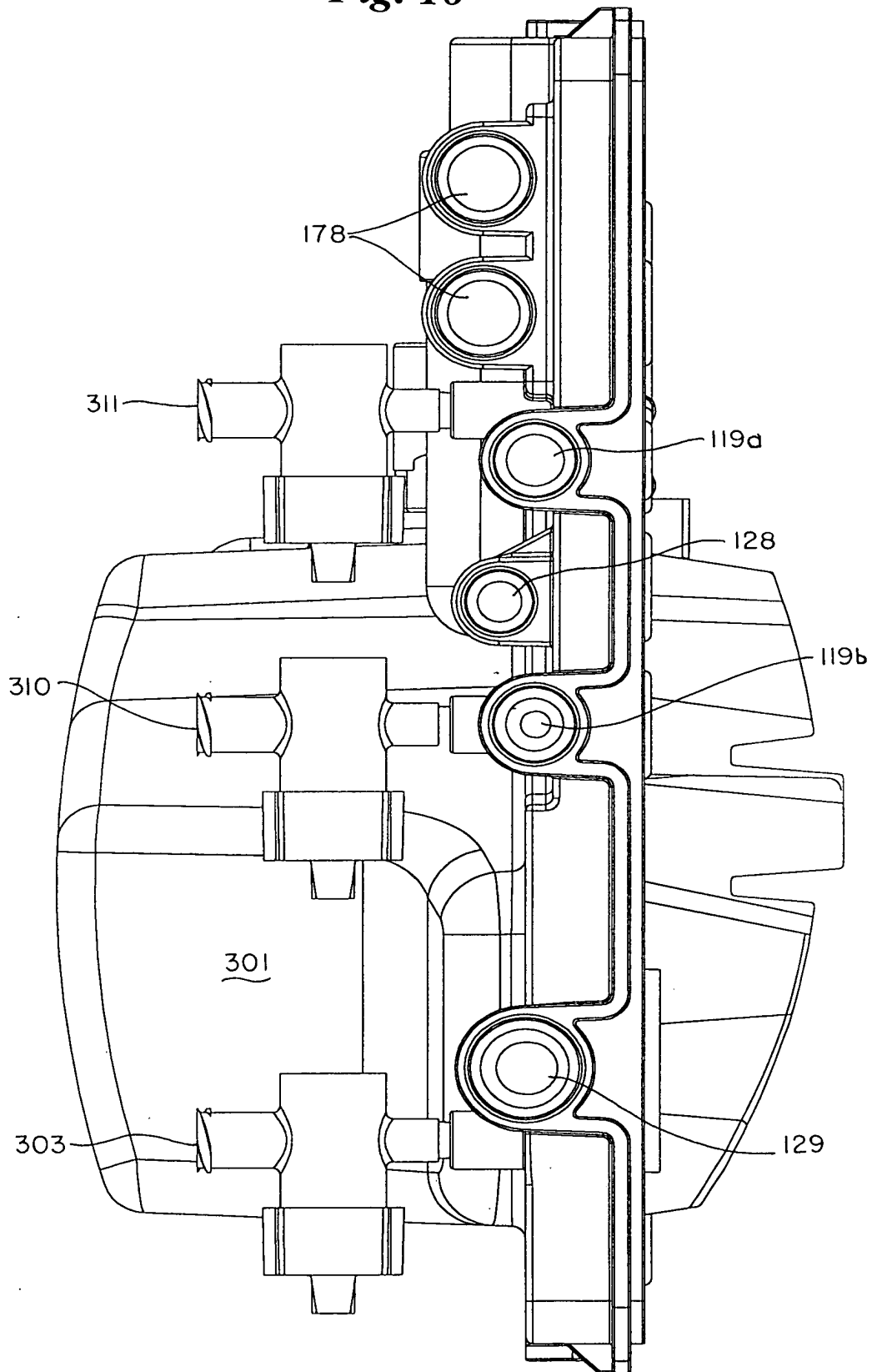


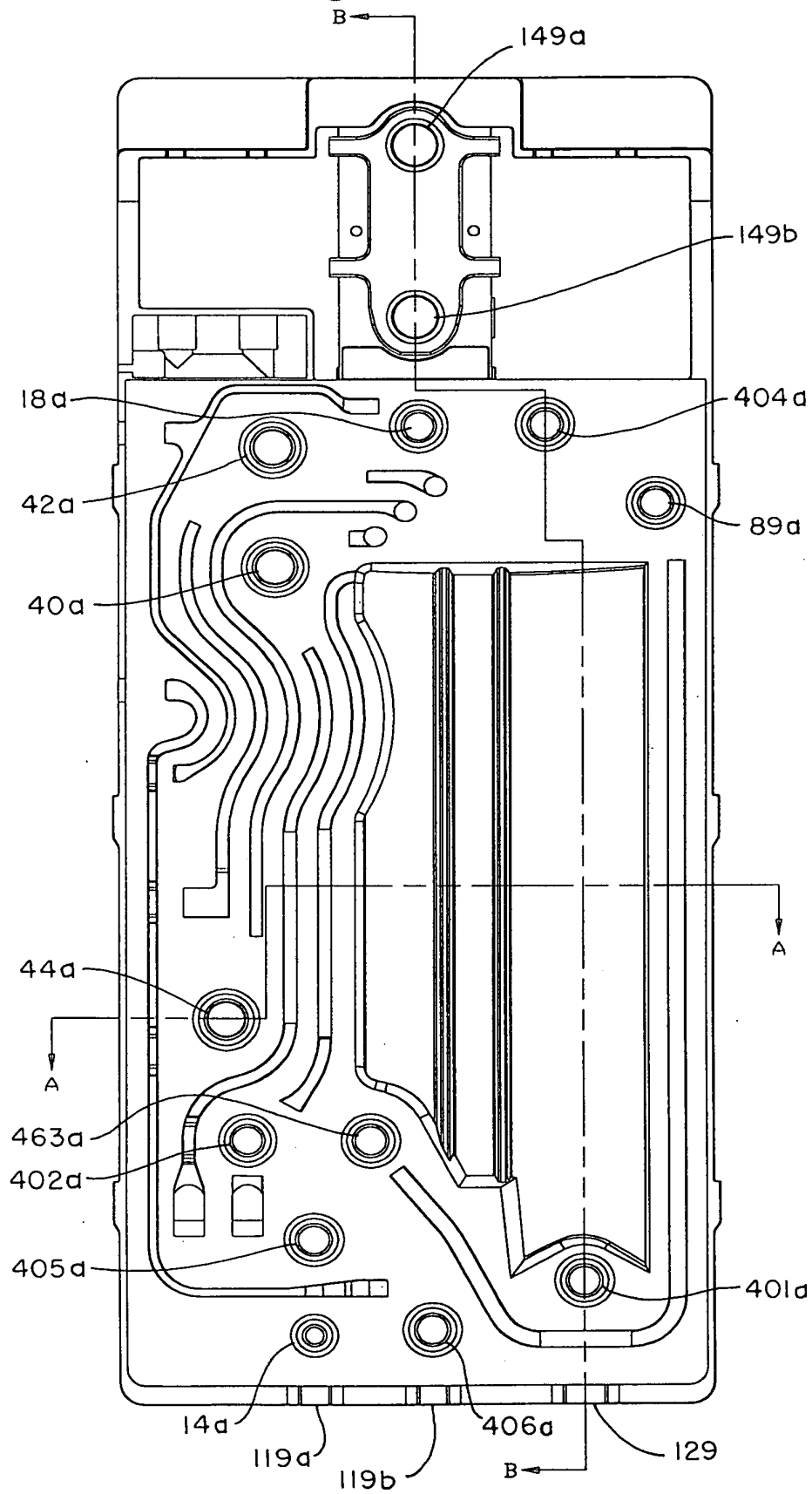
Fig. 19A

Fig. 19B

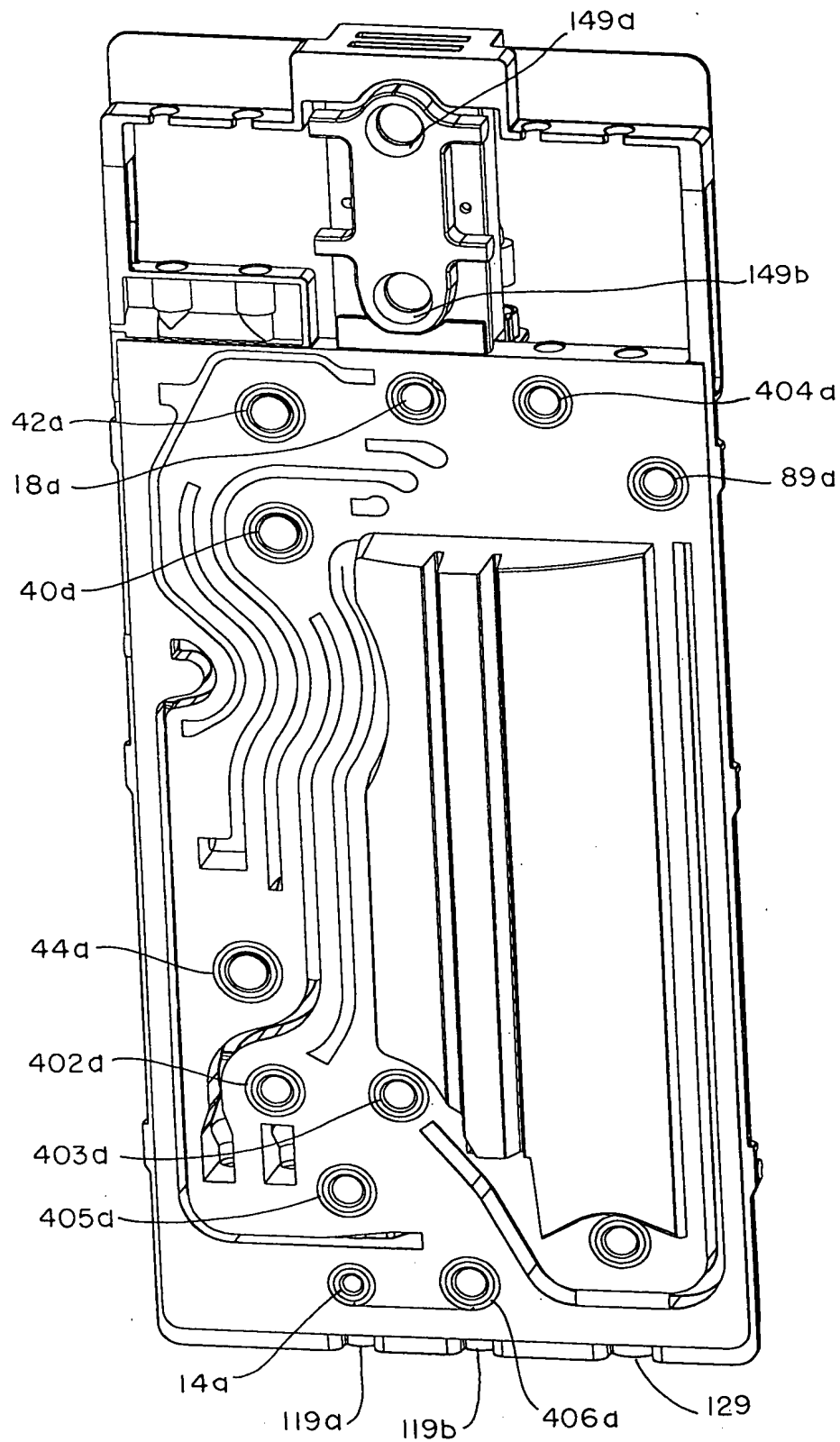


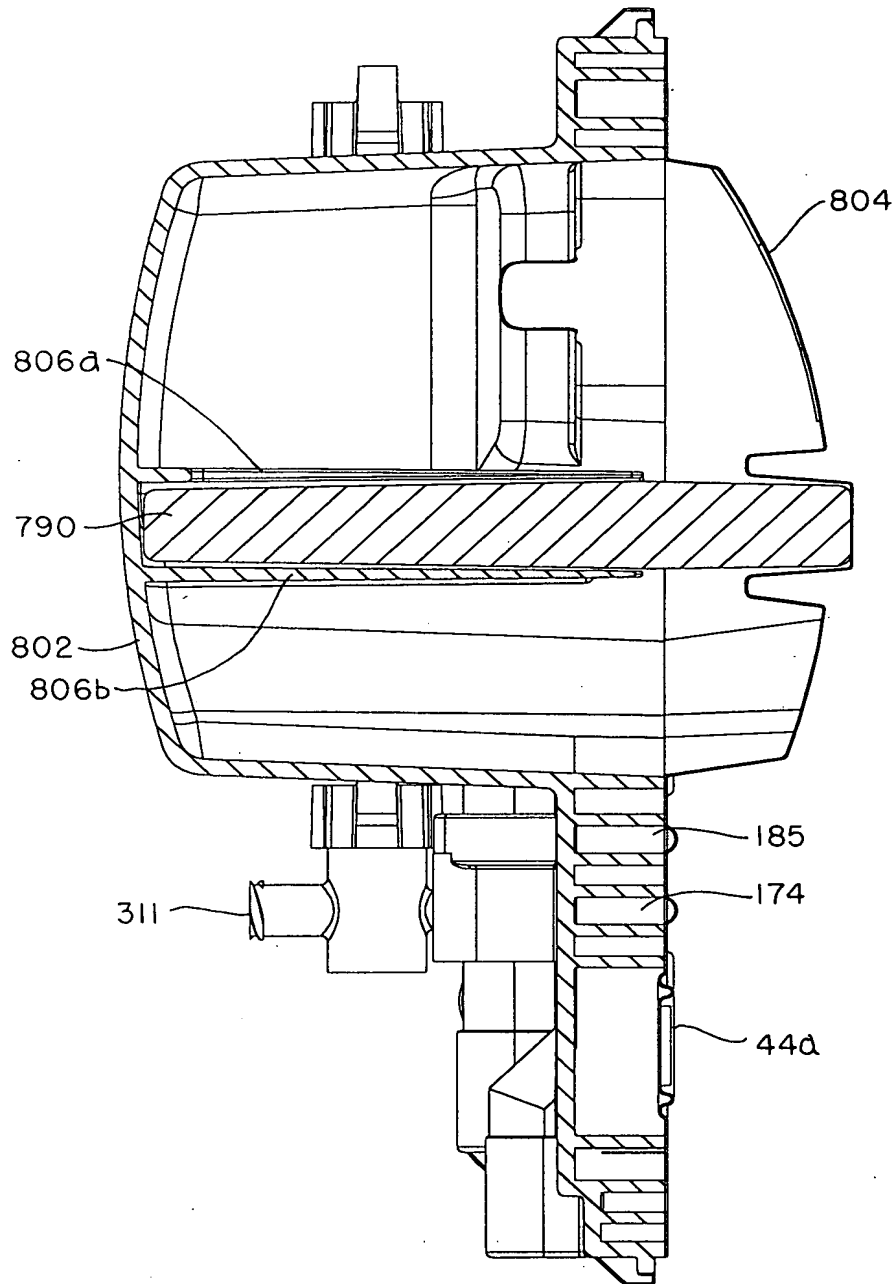
Fig. 20A

Fig. 20B

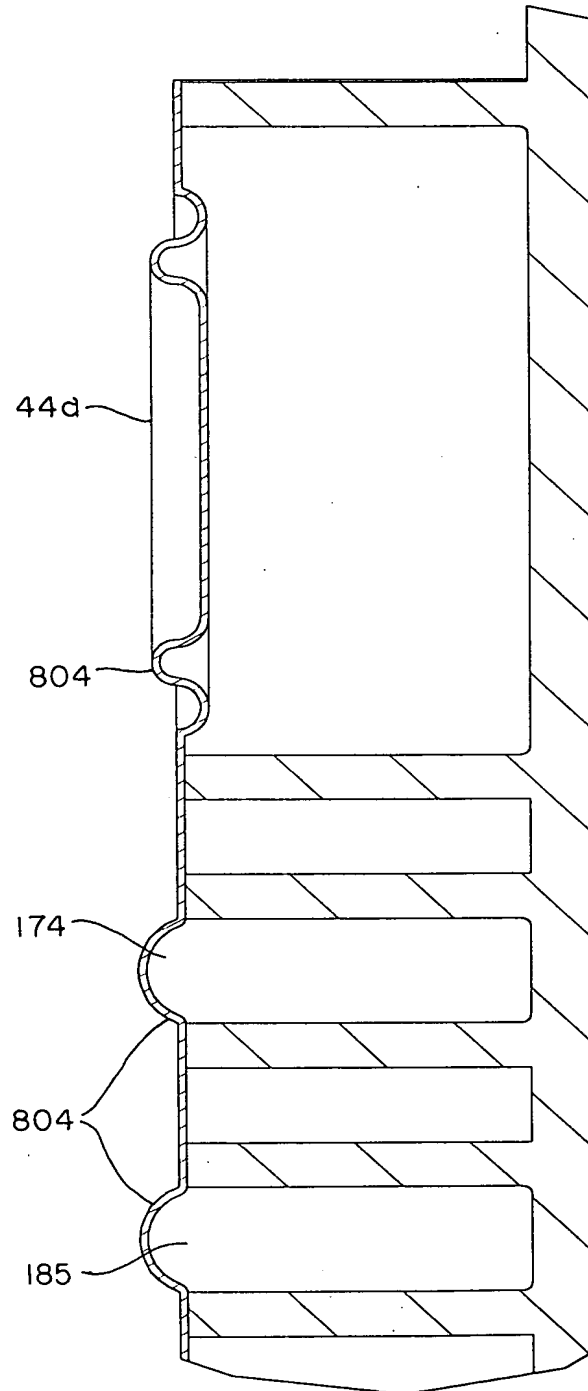


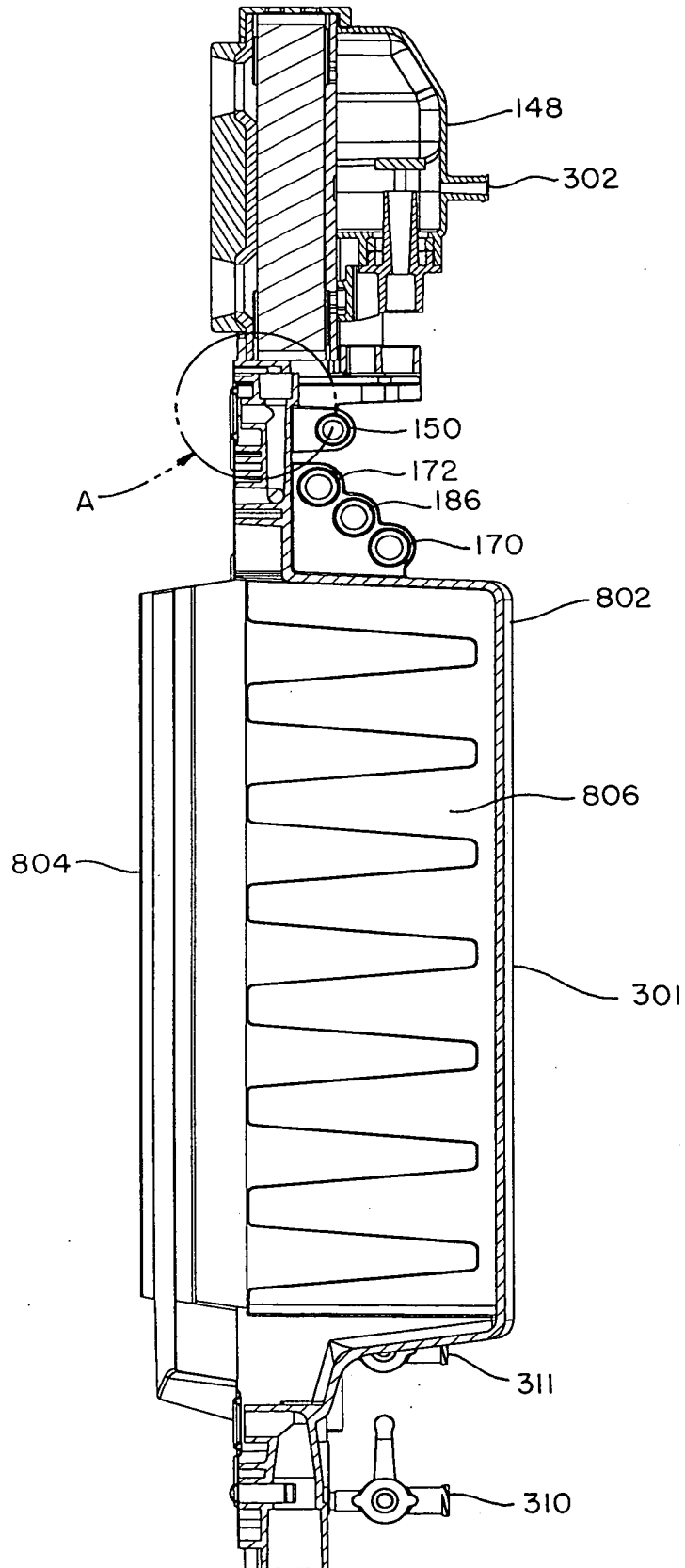
Fig. 21

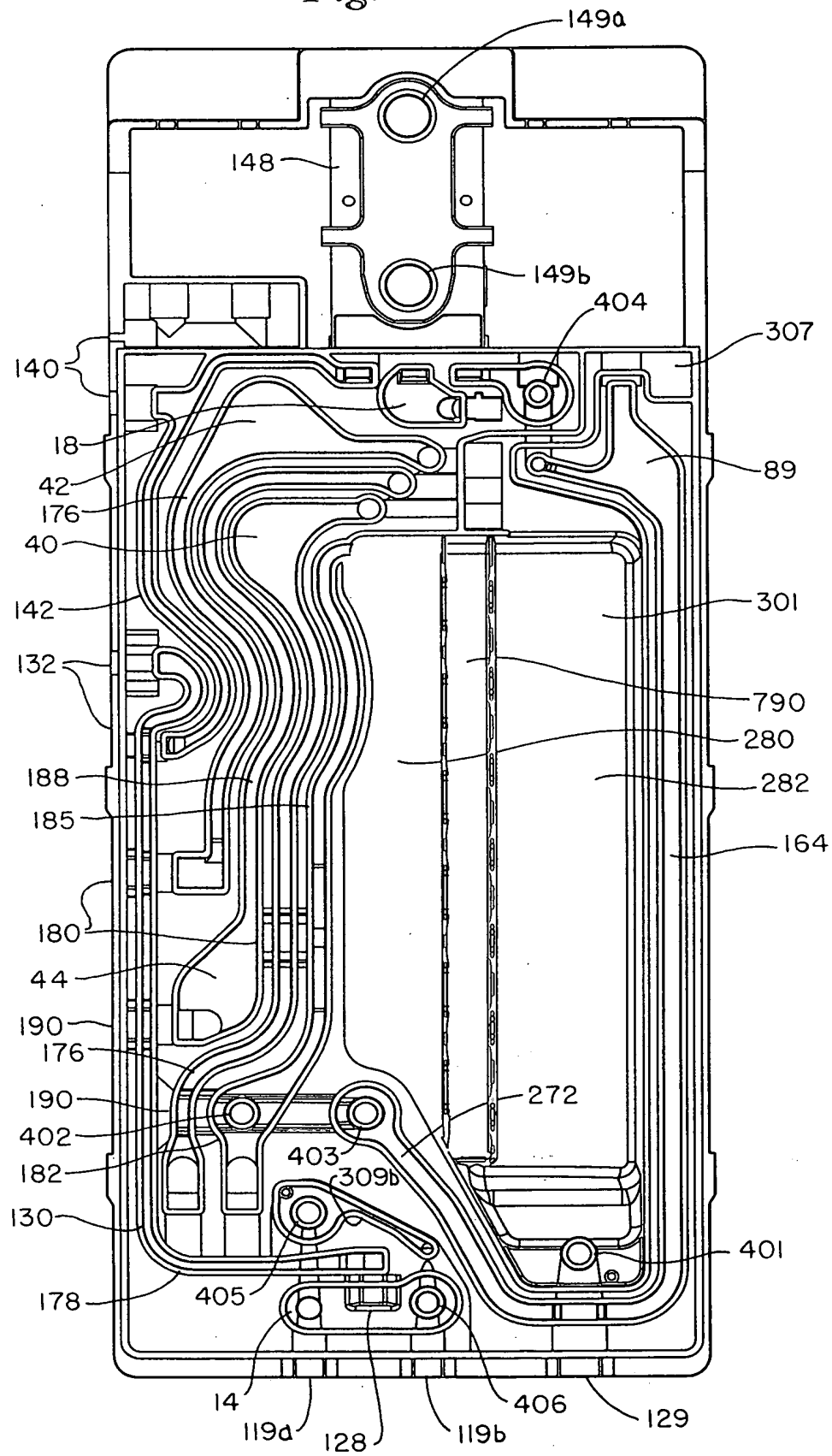
Fig. 22

Fig.23A

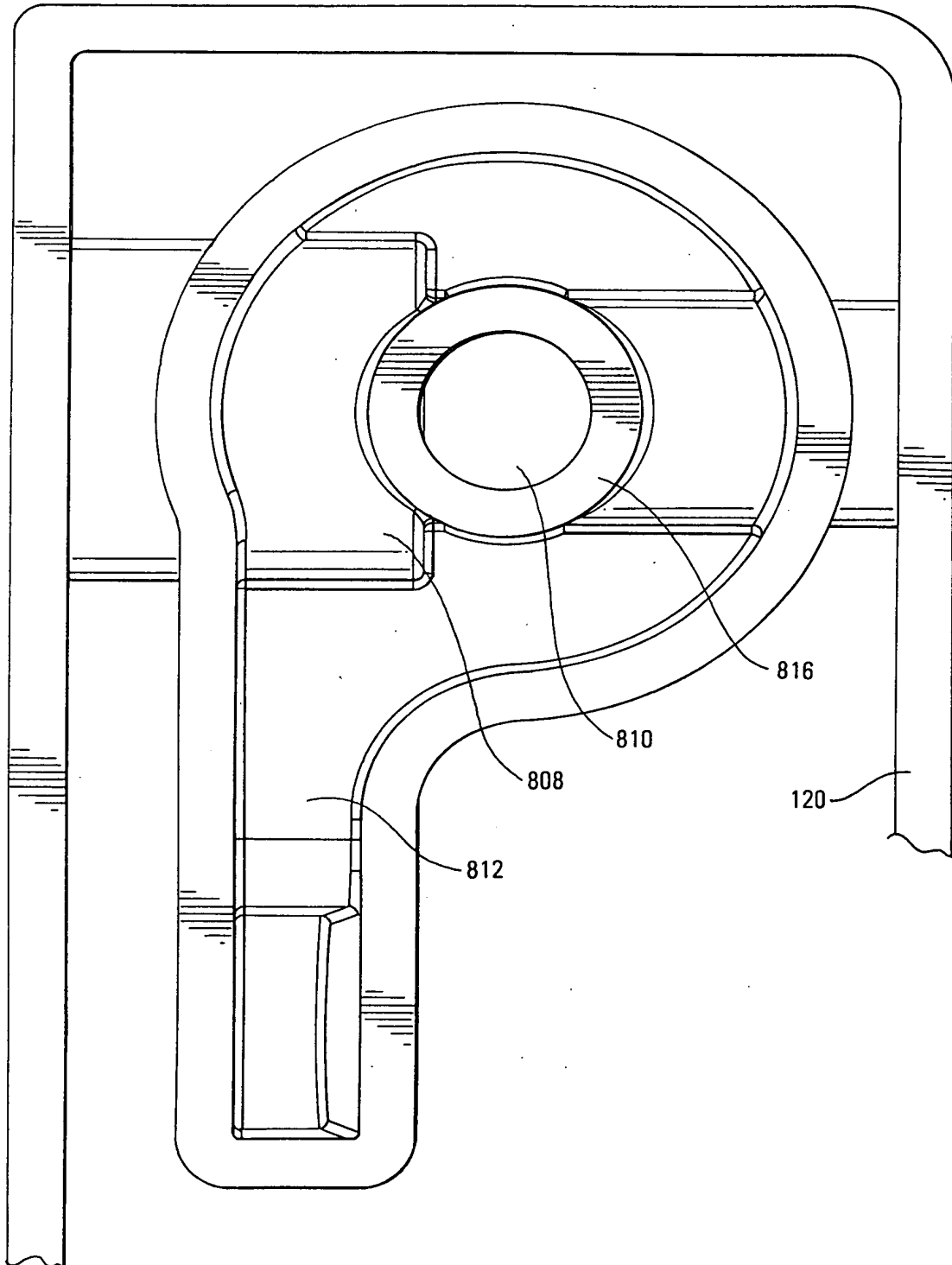


Fig. 23B

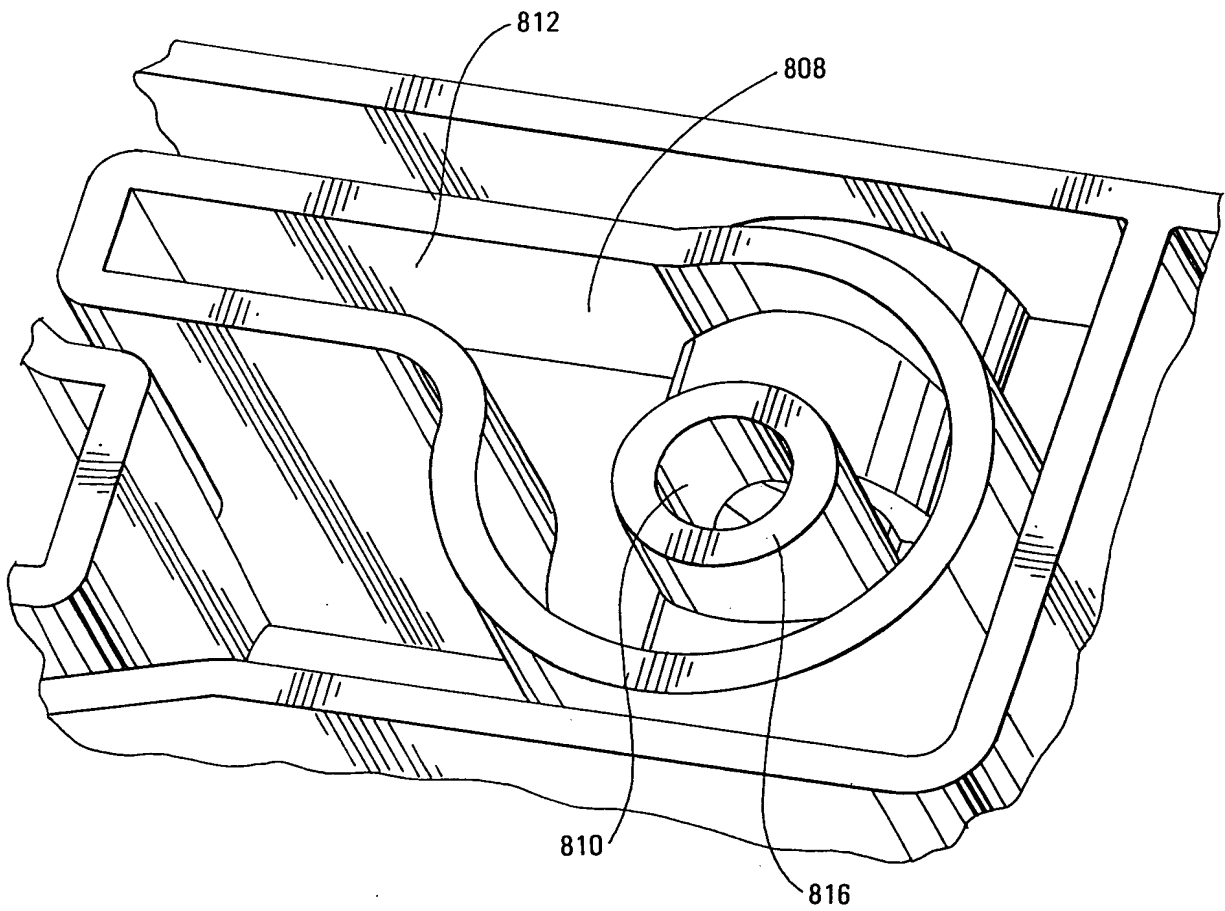


Fig. 24A

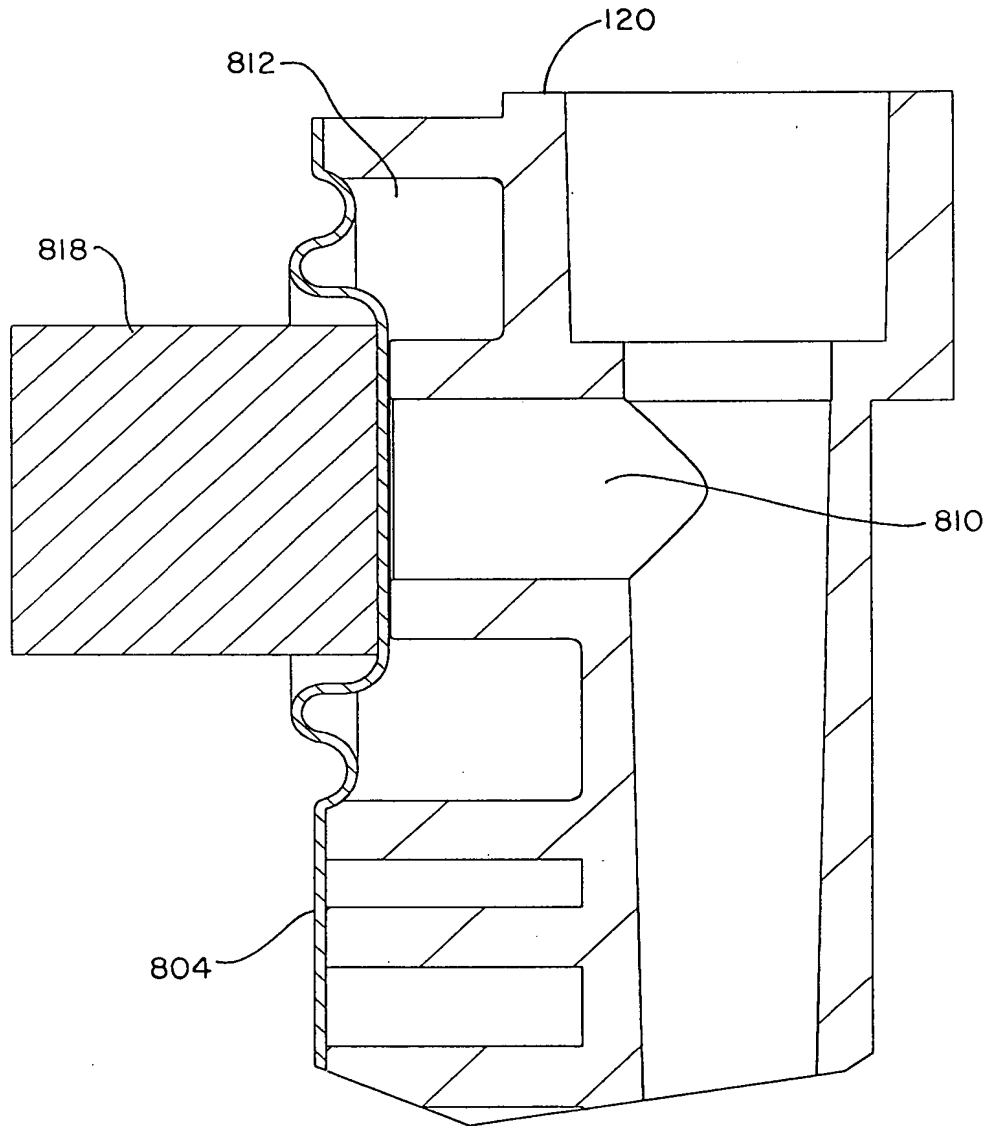
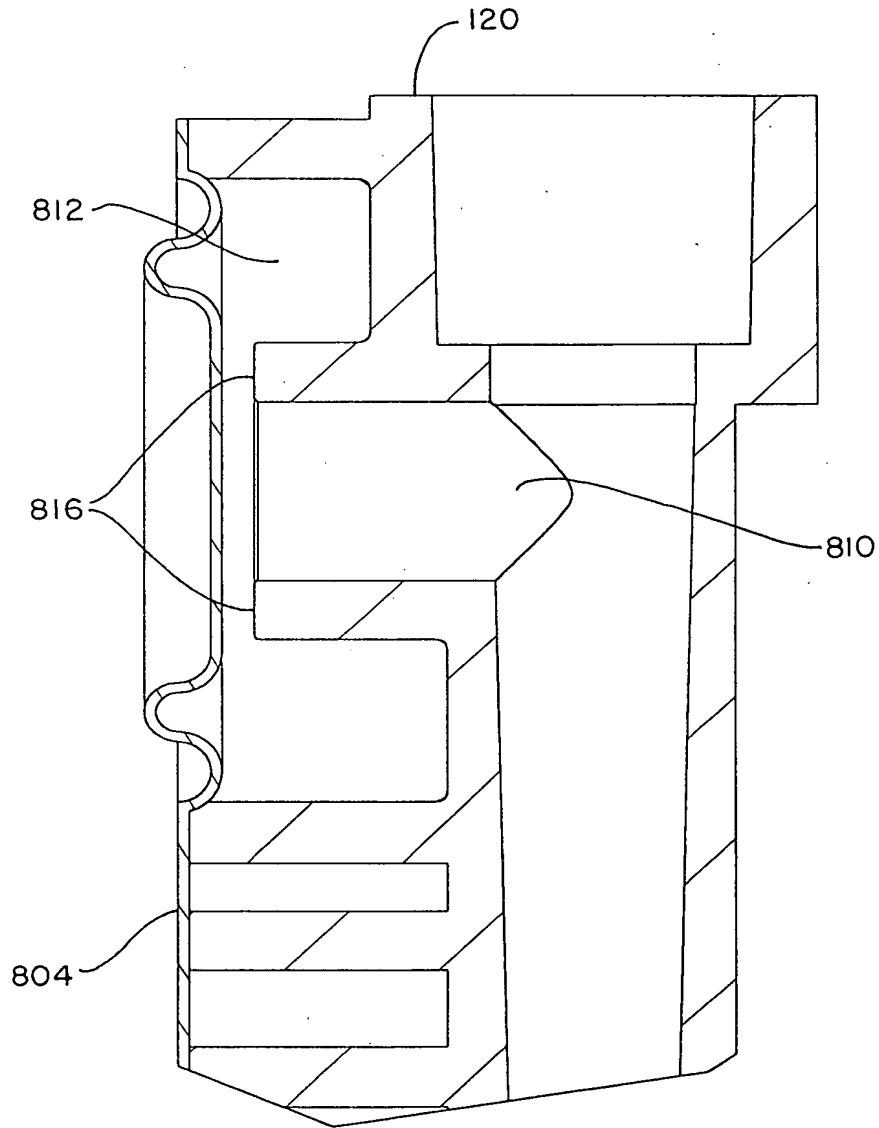


Fig. 24B



[illegible]

Fig. 26

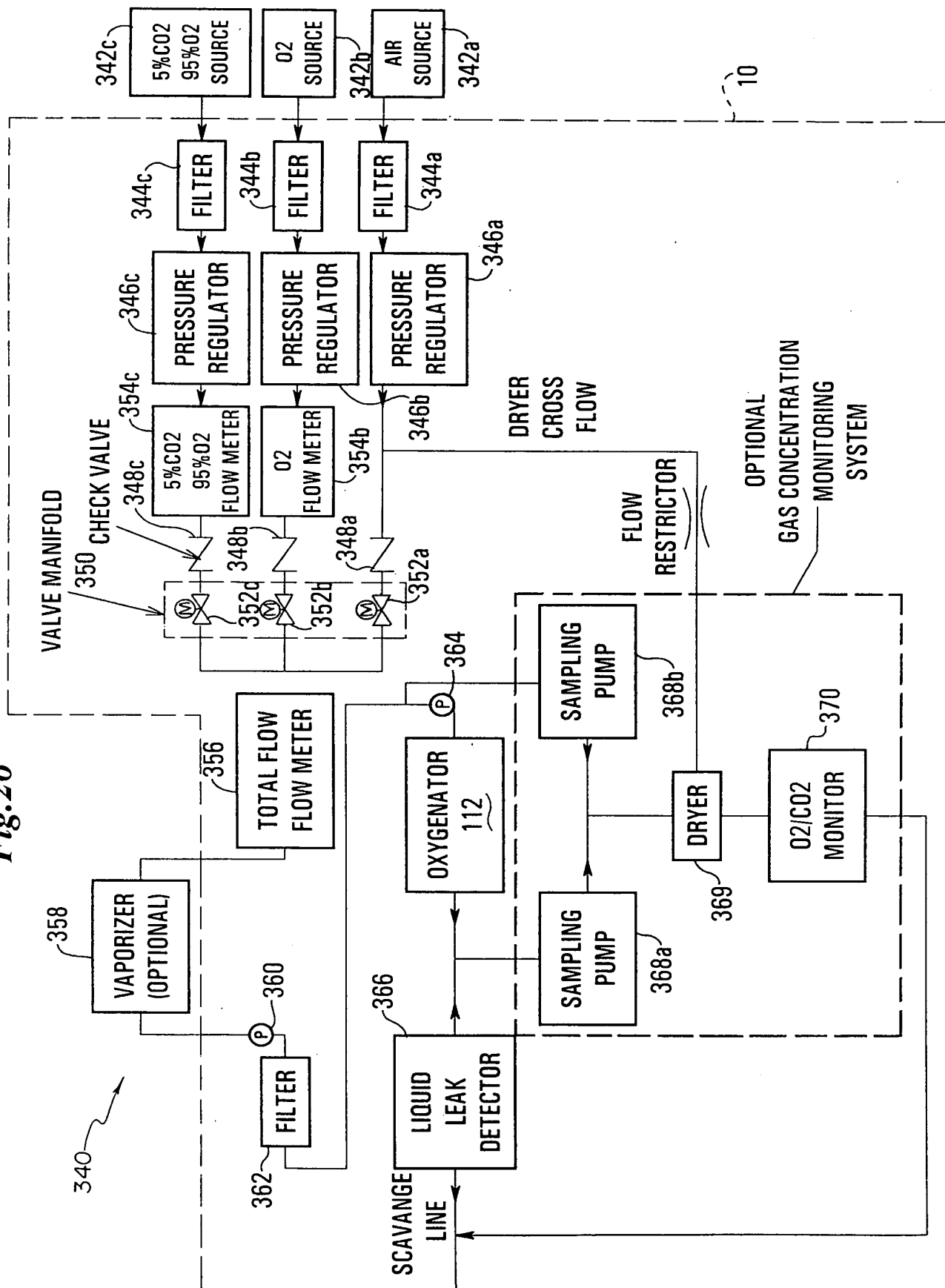


Fig. 27

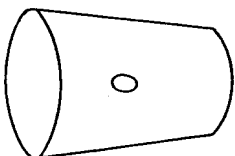
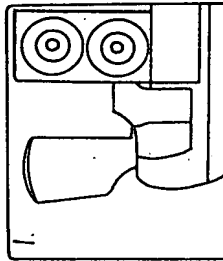
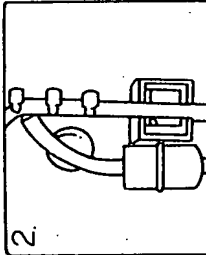
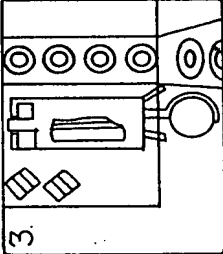
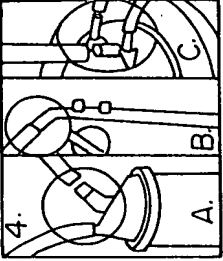
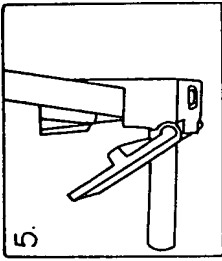
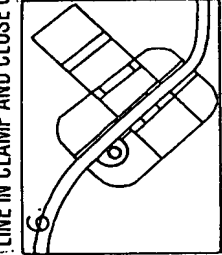
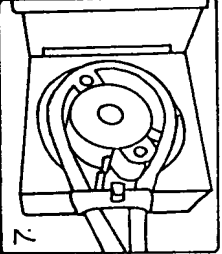
| | | | | | | | | | |
|---|--|---|--|---|--|--|--|--|--|
| VENOUS  | | ARTERIAL LINE PRESSURE 0mmHg FLOW 0.00 lpm TEMP. 0.0°C | | CARDIOPLEGIA LINE PRESSURE 0mmHg FLOW BOLUS 0.000 lpm omi TEMP. 0.0°C ISCHEMIC TIME 00:00 | | BLENDER FLOW 3.2 lpm FIO2 50% FICO2 0% | | OTHER PATIENT ARTERIAL 110 mmHg PATIENT TEMP. 32.0°C FECO2 1% 8:47 | |
| FOLLOW INSTRUCTIONS AND THEN PRESS 'LOAD' TO GO TO LOAD SCREEN. | | | | | | | | | |
| USER SET UP | | 1.  INSERT OXYGENATOR AND VENOUS RESERVOIR IN HOLDERS. | | | | | | | |
| A-V | | 2.  SNAP IN PRE-BYPASS FILTER AND VENOUS ENTRY MODULE IN HOLDERS AND PLACE VENOUS LINE IN CLAMP AND CLOSE COVER. | | | | | | | |
| CP6 | | 3.  INSERT CARTRIDGE AND ARTERIAL FILTER IN HOLDERS. | | | | | | | |
| SUCTION/FLUIDS | | 4.  CONNECT LINES TO ARTERIAL FILTER, BIVENTRICULAR ENTRY MODULE, AND VENOUS RESERVOIR(2). | | | | | | | |
| GASES | | 5.  PLACE LINE IN BUBBLE SENSOR AND CLOSE COVER. | | | | | | | |
| WAVEFORMS | | 6.  PLACE ARTERIAL AND CARDIOPLEGIA TABLE LINES IN CLAMPS AND CLOSE COVERS. | | | | | | | |
| SETTINGS | | 7.  INSTALL PUMP LOOPS AND CLOSE ALL LIDS. HANG TABLE PACK ON CONSOLE. | | | | | | | |
| | | UNLOAD LOAD | | | | | | | |

Fig. 28A

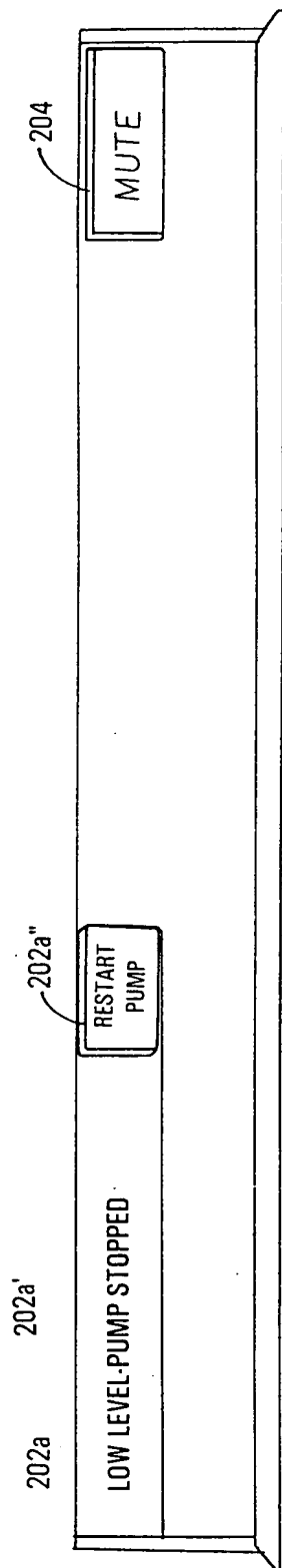


Fig. 28B

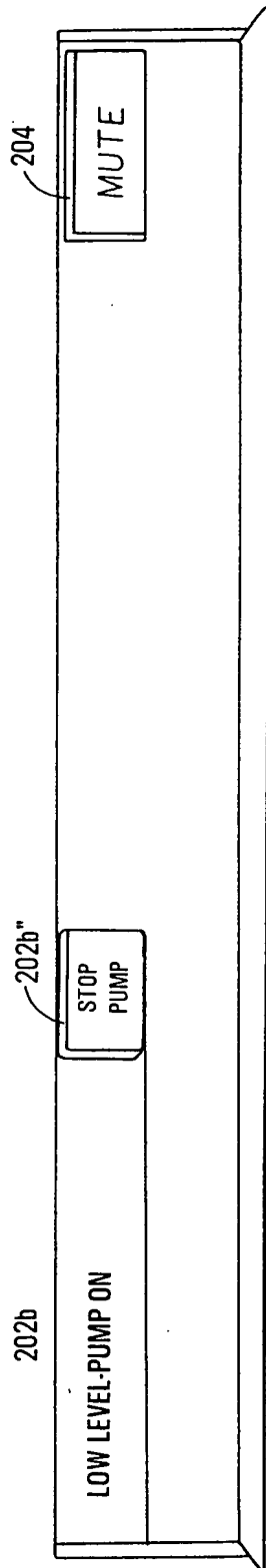


Fig. 28C

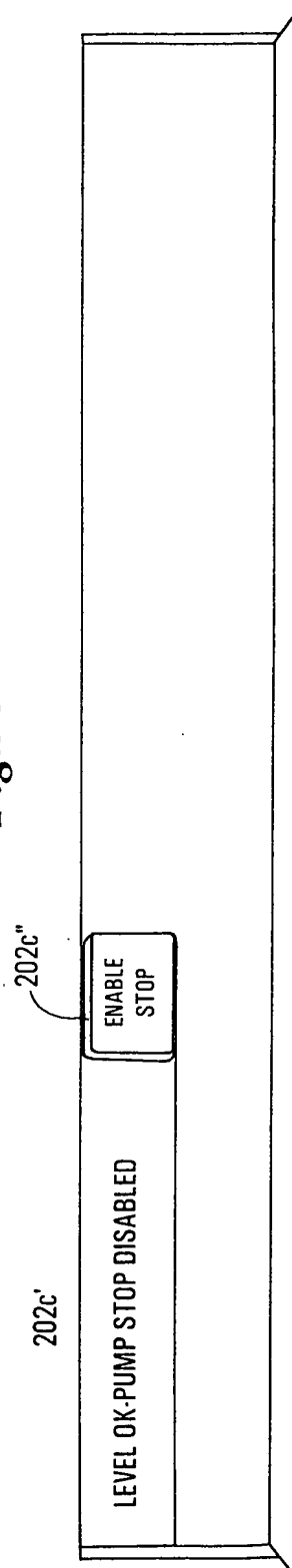


Fig. 28D

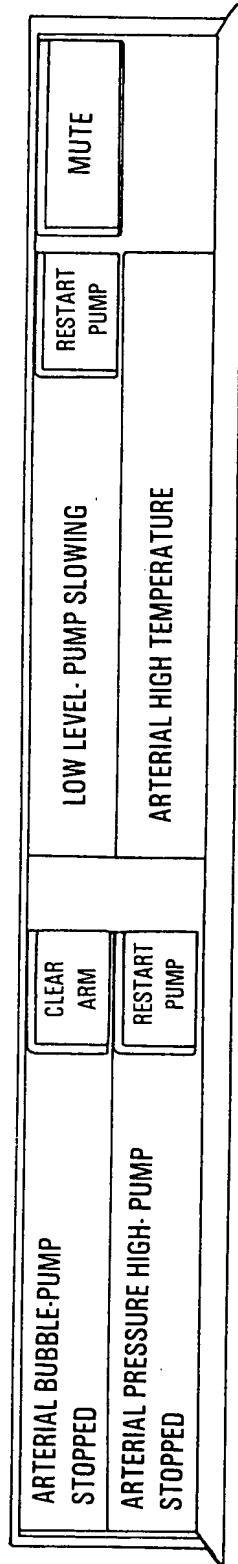


Fig. 28E

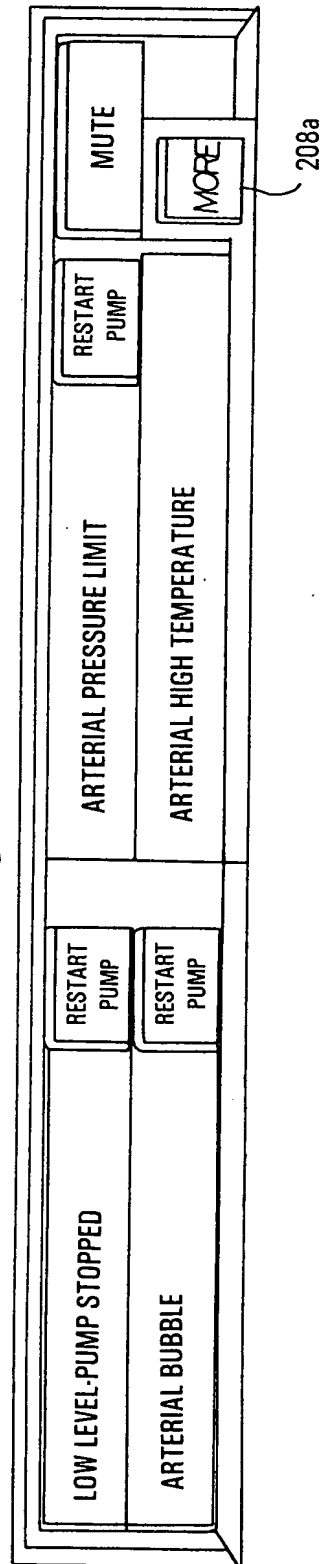


Fig. 28F

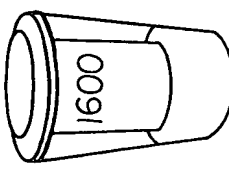

| | | | | | |
|--|--|--|---------------------------|--------------|------|
| LOW LEVEL-PUMP STOPPED | | RESTART PUMP | ARTERIAL PRESSURE LIMIT | RESTART PUMP | MUTE |
| ARTERIAL BUBBLE | | RESTART PUMP | ARTERIAL HIGH TEMPERATURE | LESS | 208b |
| VENOUS  1600 SAT 75% HCT 25% TEMP 32°C | | ARTERIAL PRESSURE 200mmHg FLOW 0.00 lpm TEMP 32°C | | | |
| FULL OPEN  0% FULL CLOSE | | ARTERIAL PRESSURE LOW CRYSTAL POT MUST BE OFF PLEAGIA K + > 40 mEq/L ON BATTERY | | | |

Fig. 29

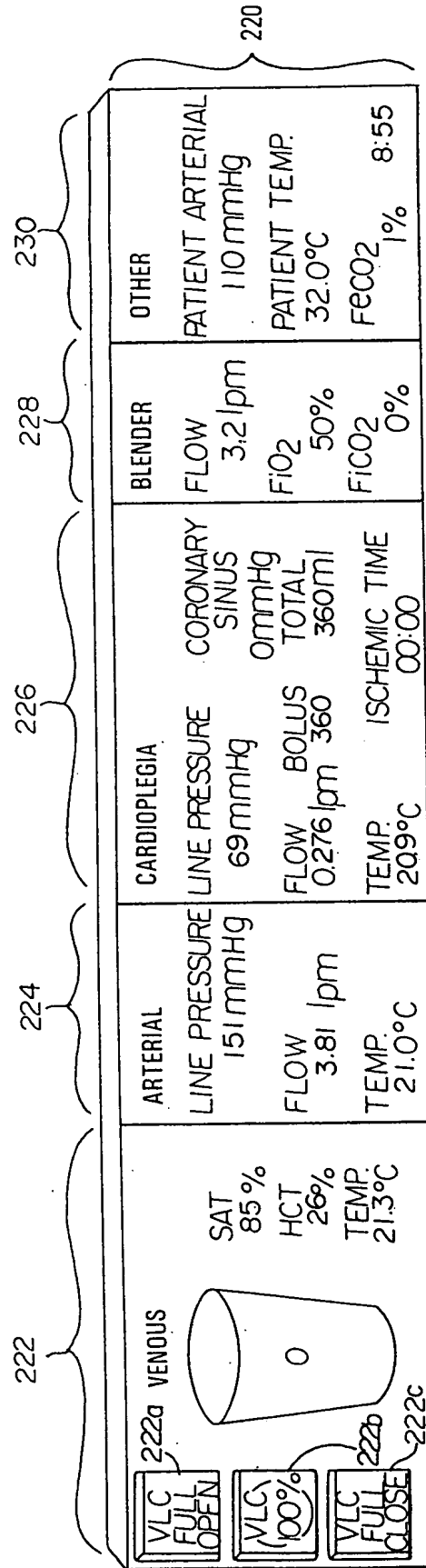


Fig. 30A

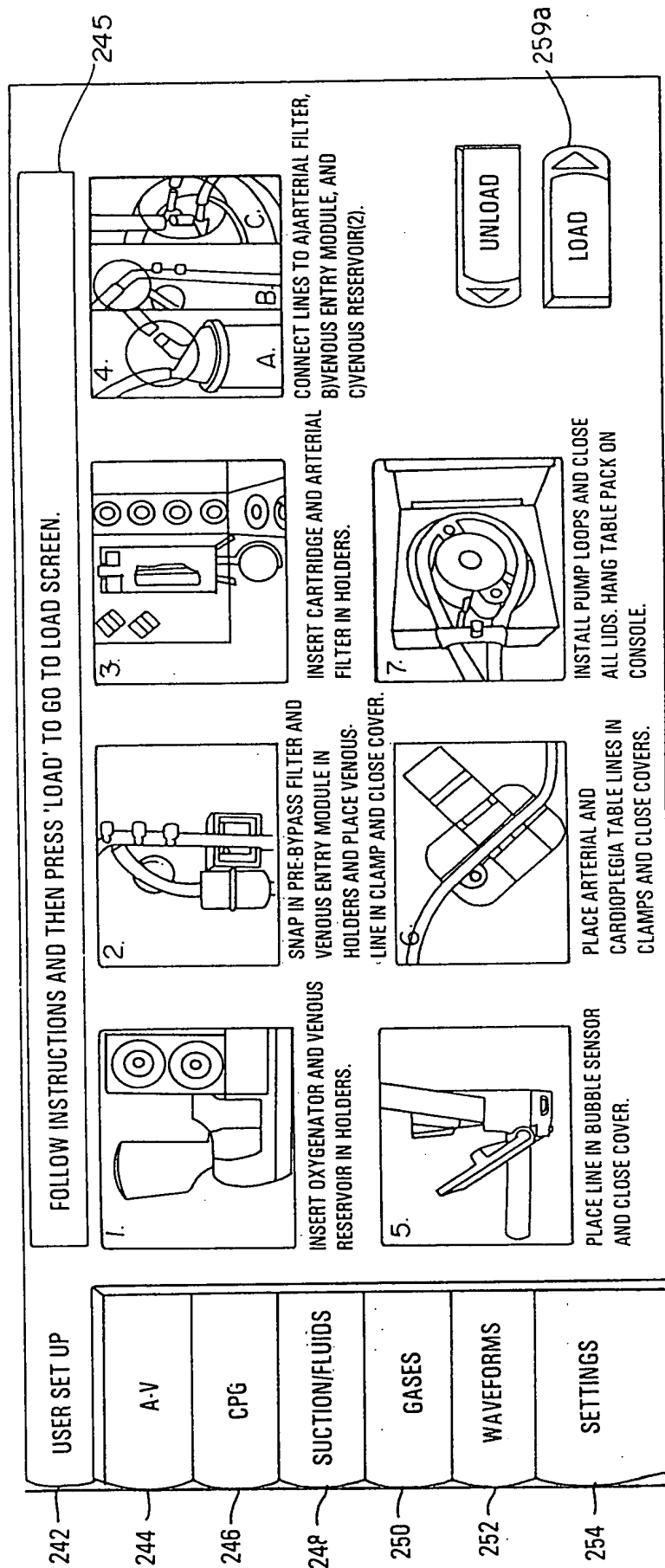


Fig. 30B

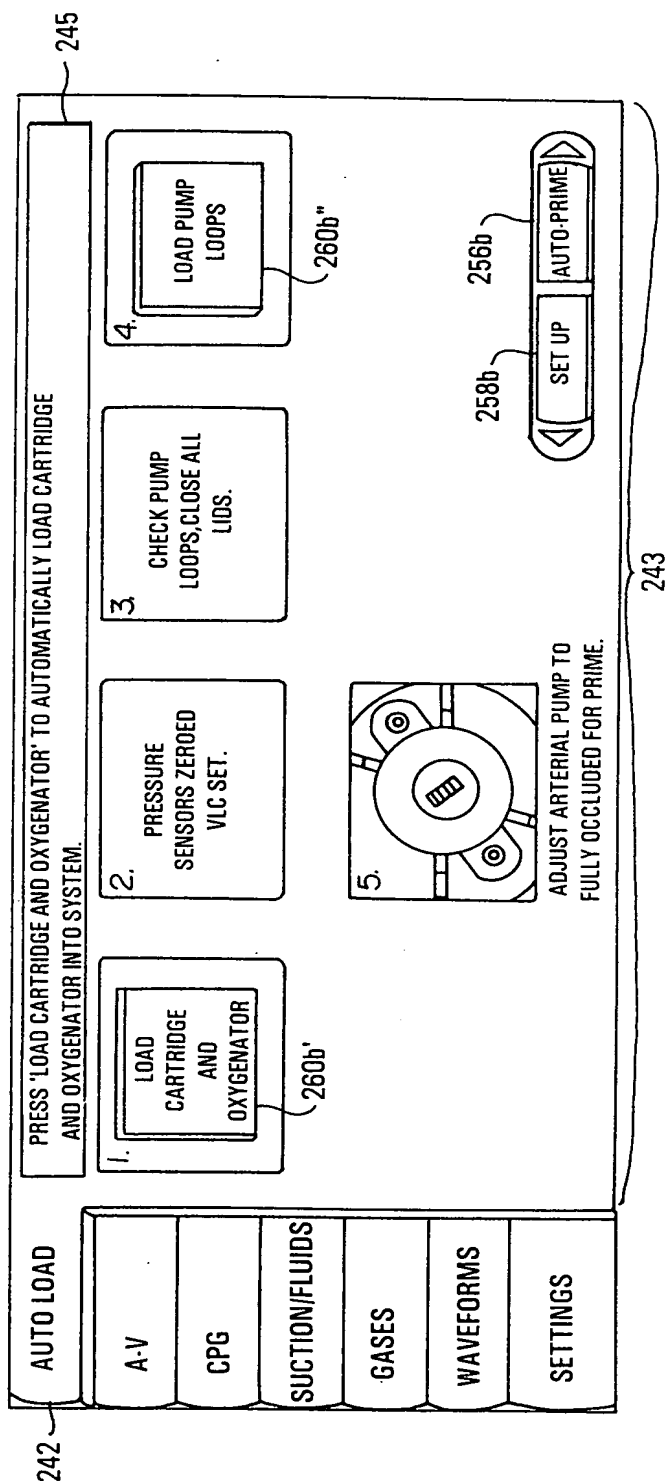


Fig. 30C

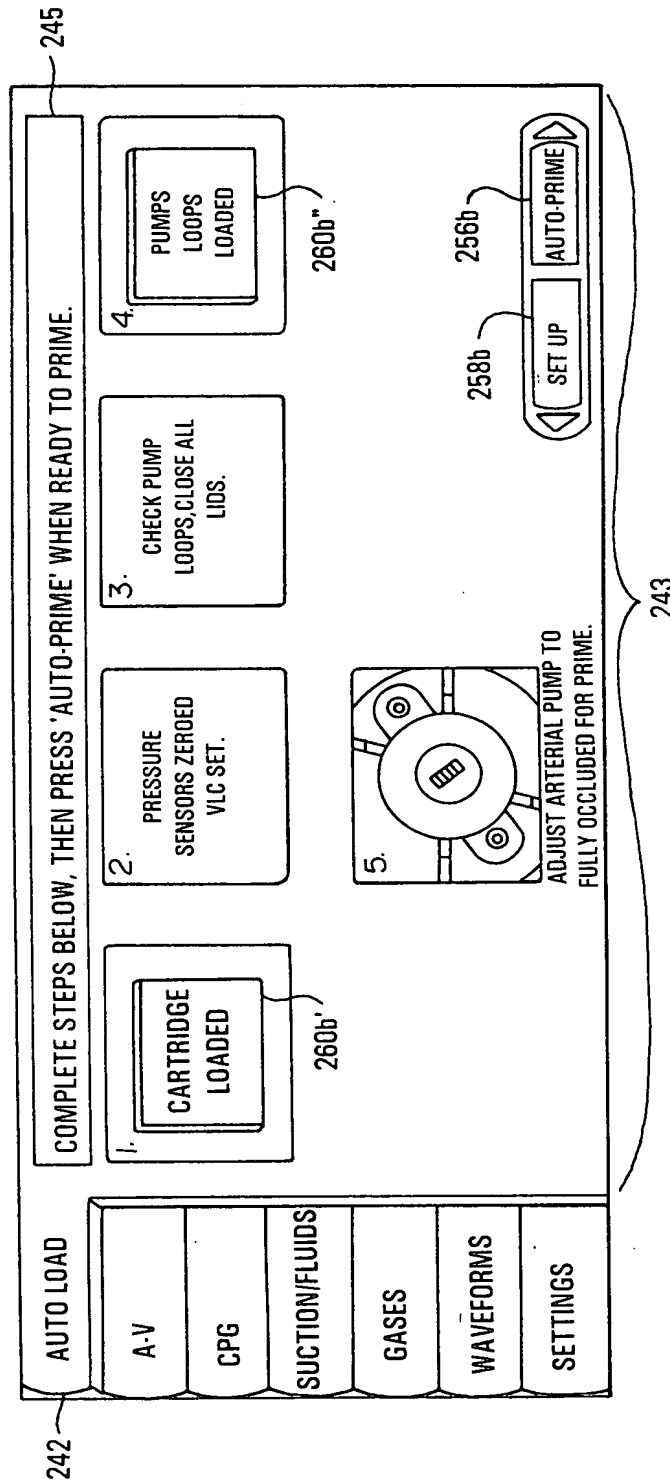


Fig. 30D

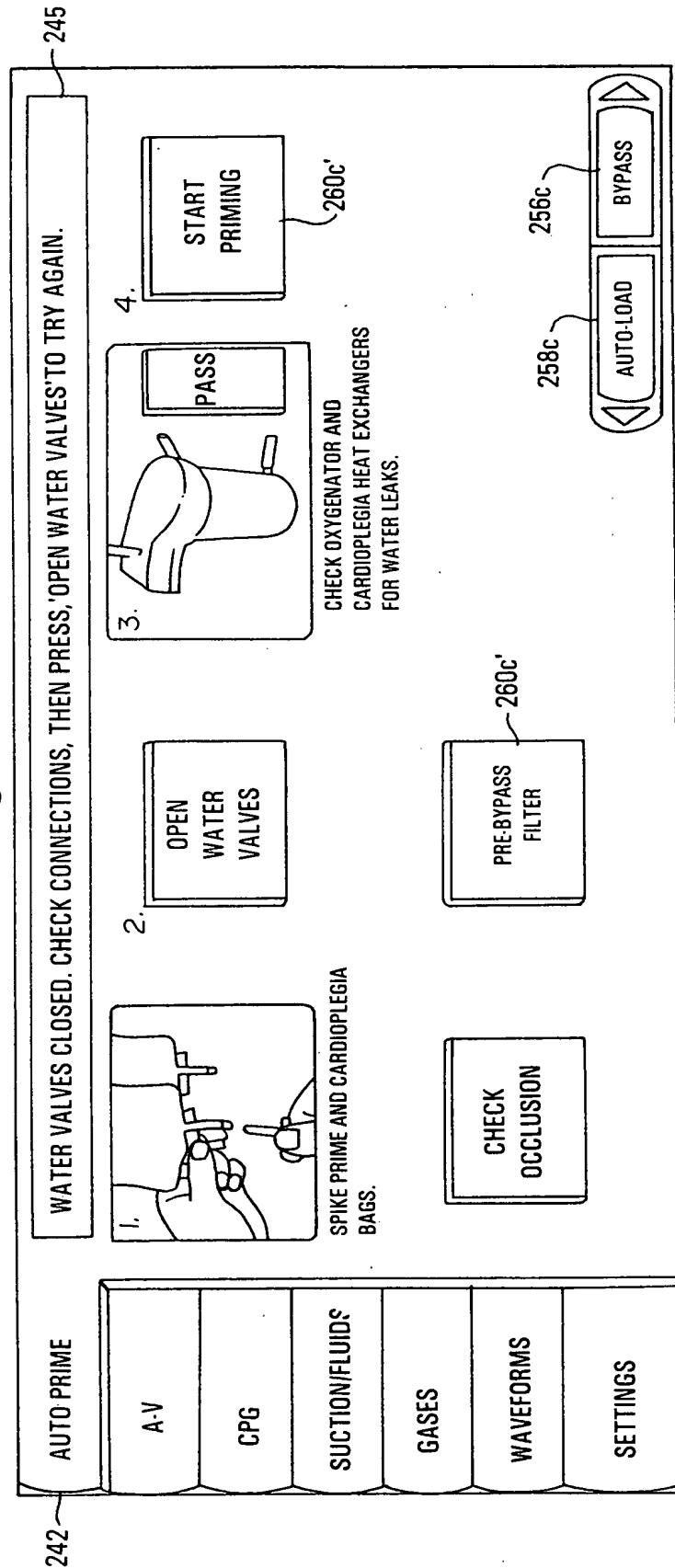


Fig. 30E

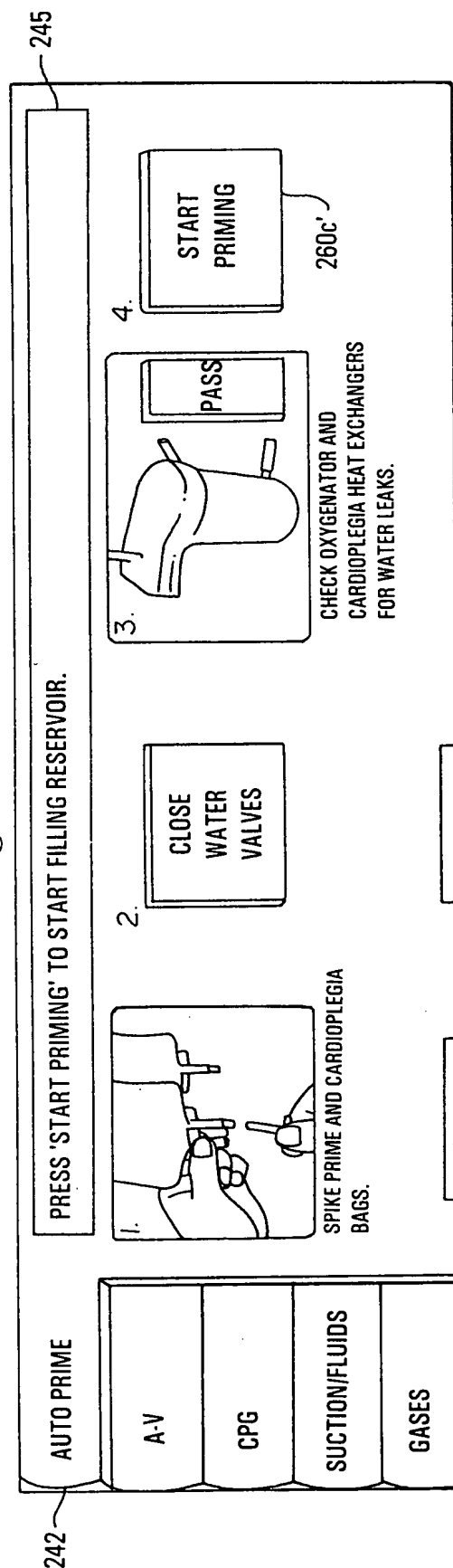


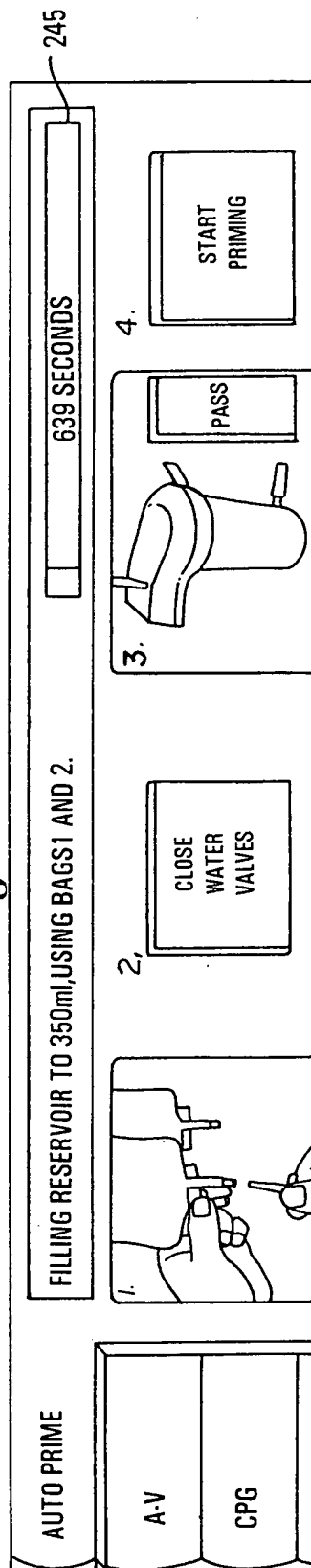
Fig. 30F

Fig. 30G

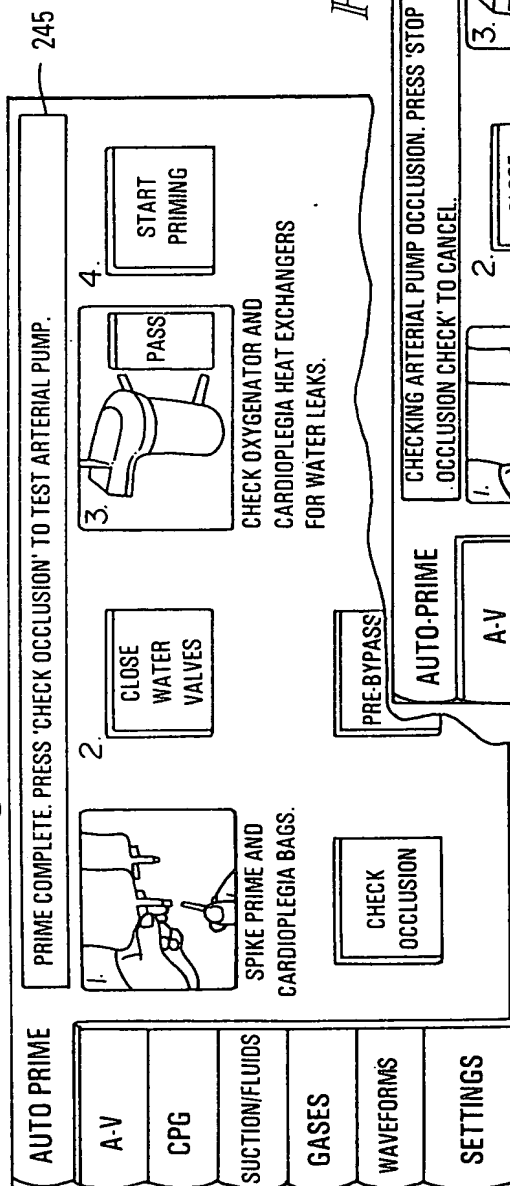


Fig. 30H

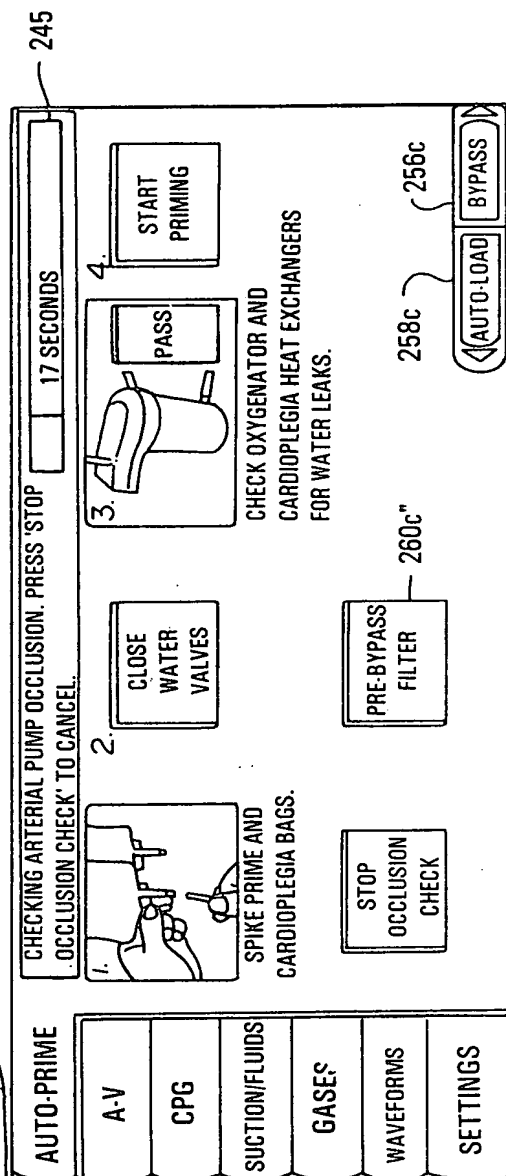


Fig. 30I

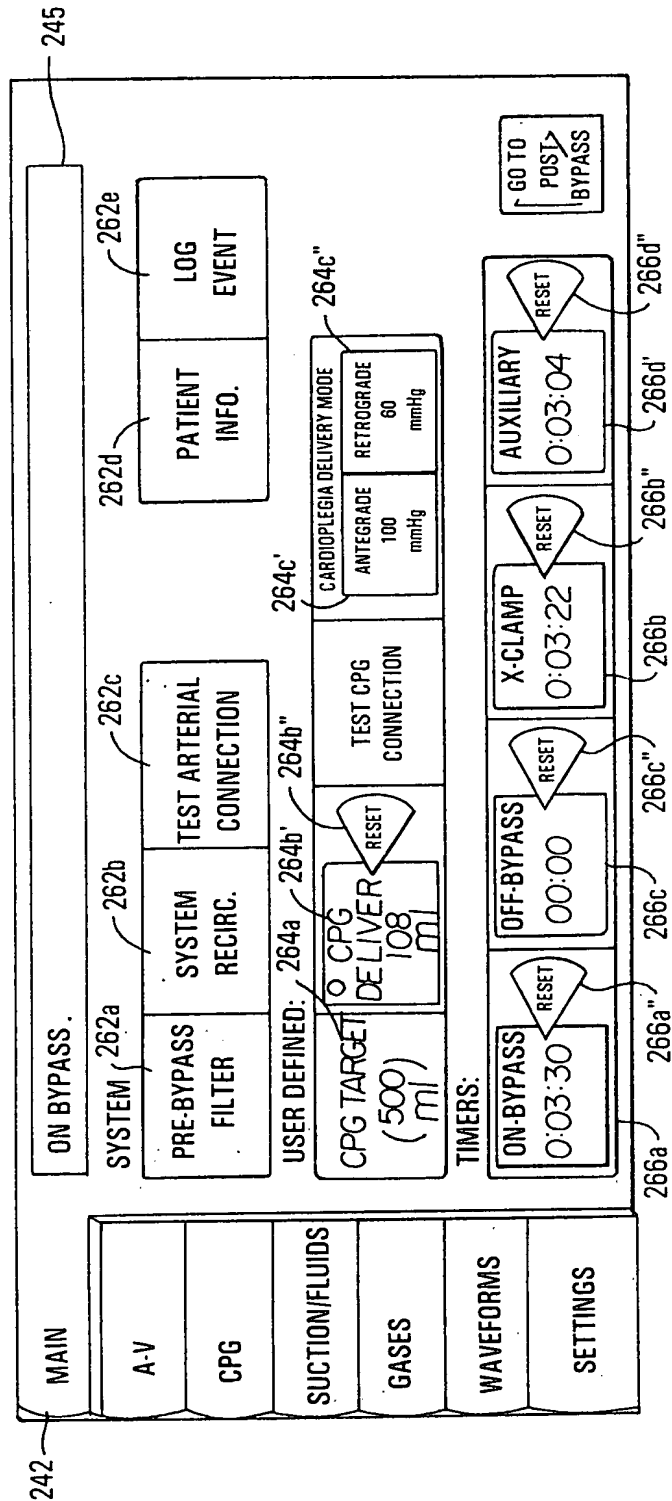


Fig. 30J

| | | | | | | | | | | |
|----------------|---|--|---------------------|--|-----------------------------|--|----------------------|--|---|--|
| MAIN | FILL PATIENT: START ARTERIAL TO FLOW DOWN PATIENT LINE. | | | | | | | | | |
| A-V | SYSTEM | | | | | | | | | |
| CPG | PRE-BYPASS FILTER | | SYSTEM RECIRC. | | TEST ARTERIAL CONNECTION | | PATIENT INFO. | | LOG EVENT | |
| SUCTION/FLUIDS | USER DEFINED: 264d' 264d" FILL PATIENT | | | | | | | | | |
| GASES | BOLUS ml | | DELIVER 0 ml | | CHASE BOLUS ml | | DELIVER ml | | TO BAGS | |
| WAVEFORMS | TIMERS: | | | | | | | | | |
| SETTINGS | ON-BYPASS 0:05:57 | | OFF-BYPASS 00:45 | | X-CLAMP 0:06:34 | | AUXILIARY 0:03:47 | | RETURN TO < BYPASS MOVE TO UNLOADING | |

Fig. 30K

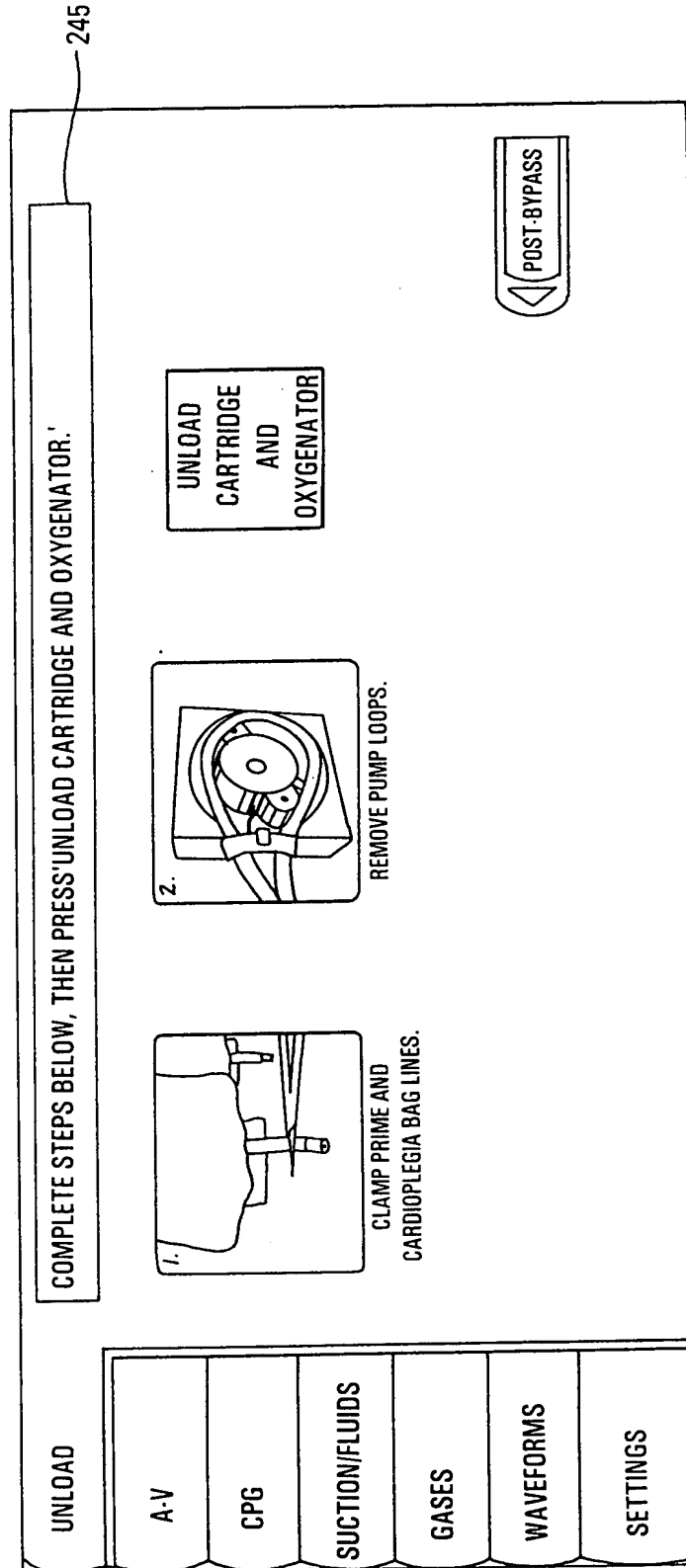


Fig.30L

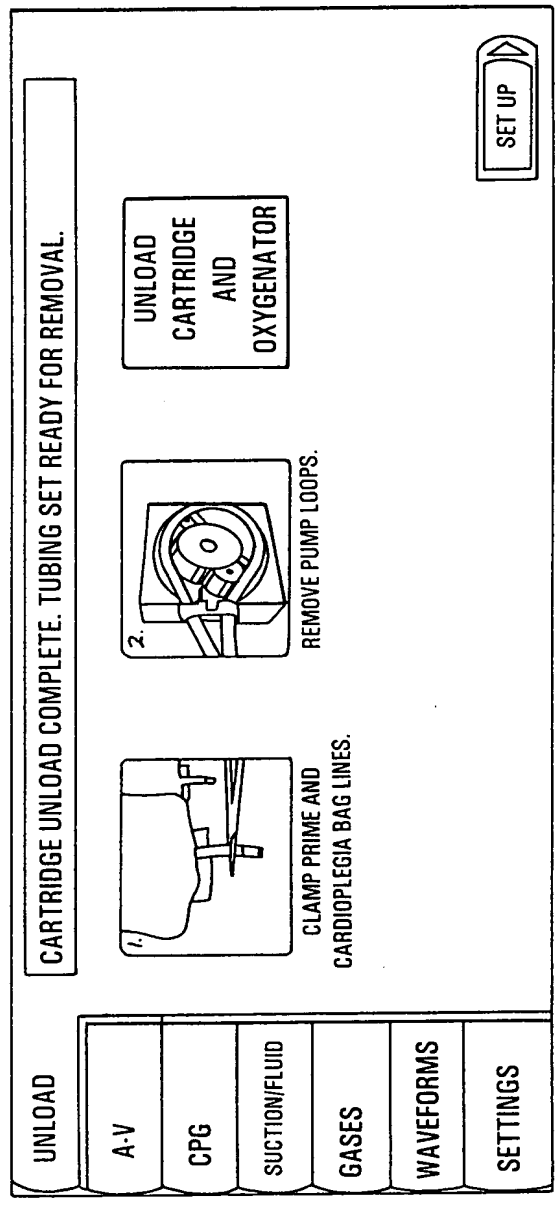


Fig. 31A

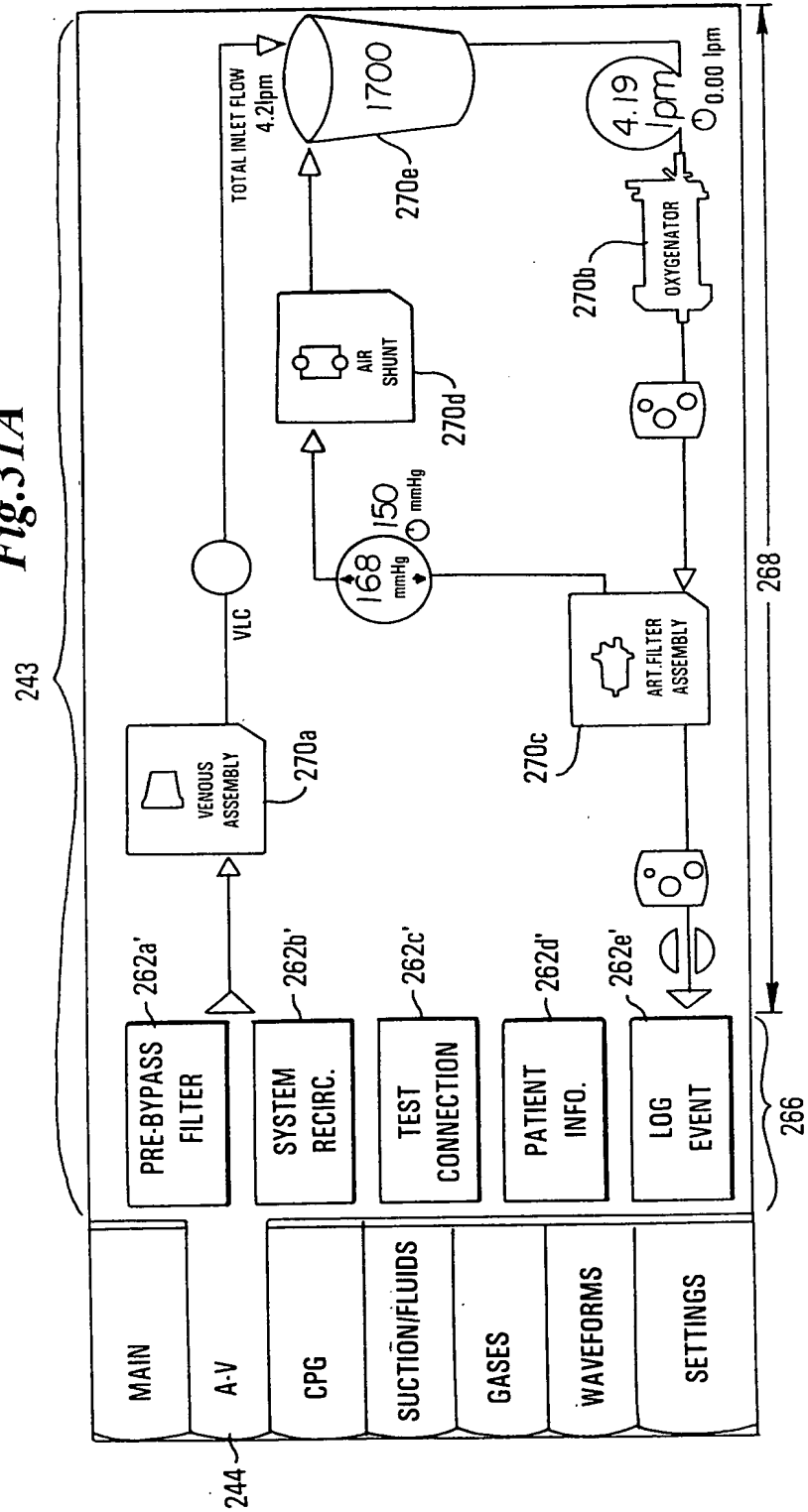


Fig. 31B

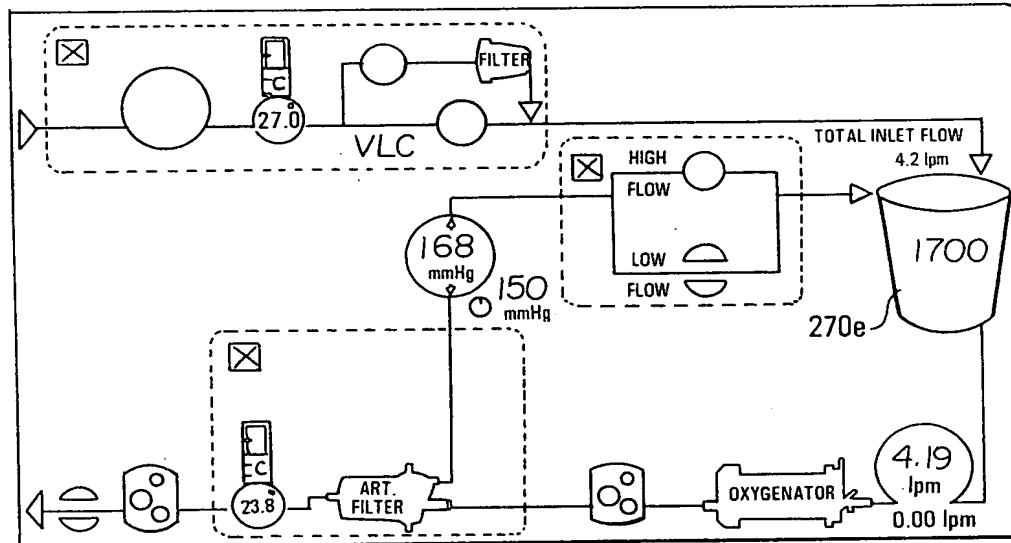


Fig. 31C

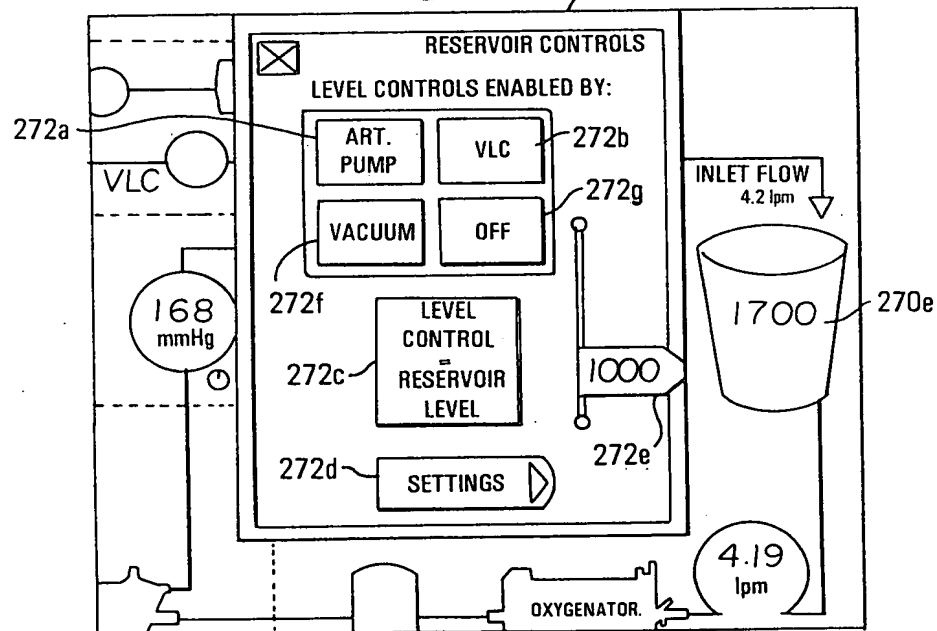


Fig.31D

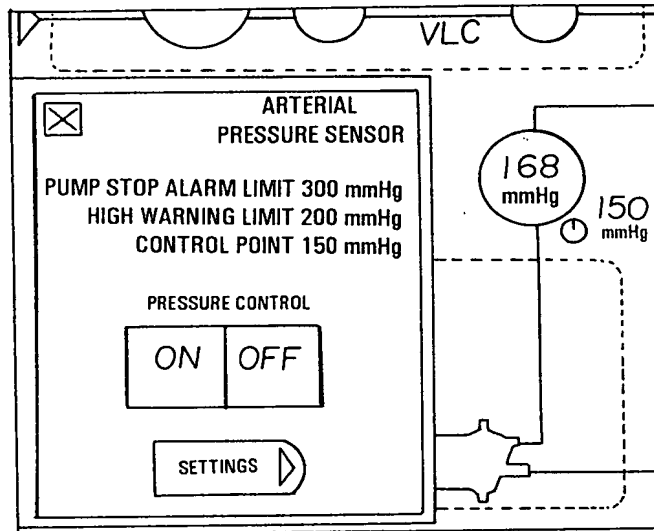


Fig.31E

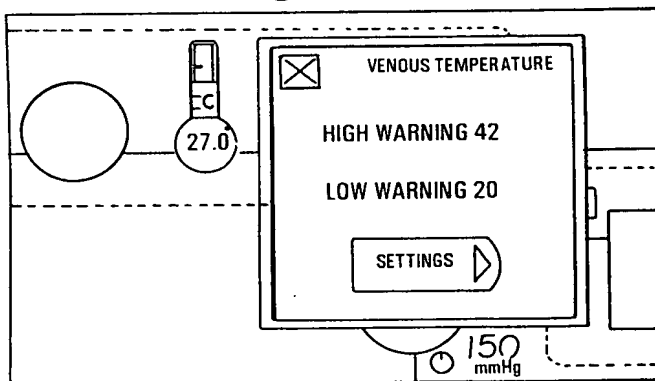


Fig.31F

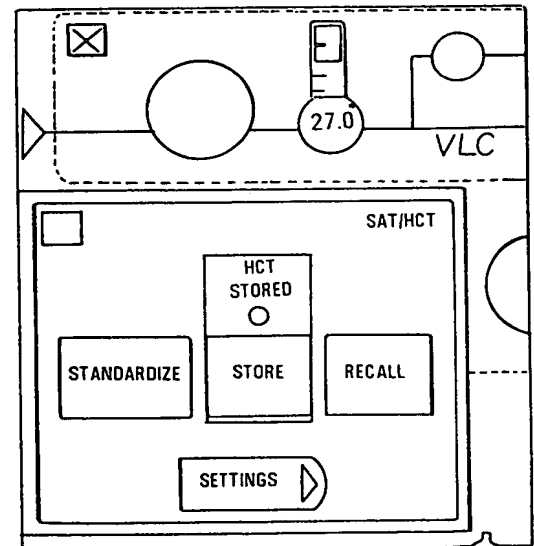


Fig. 32A

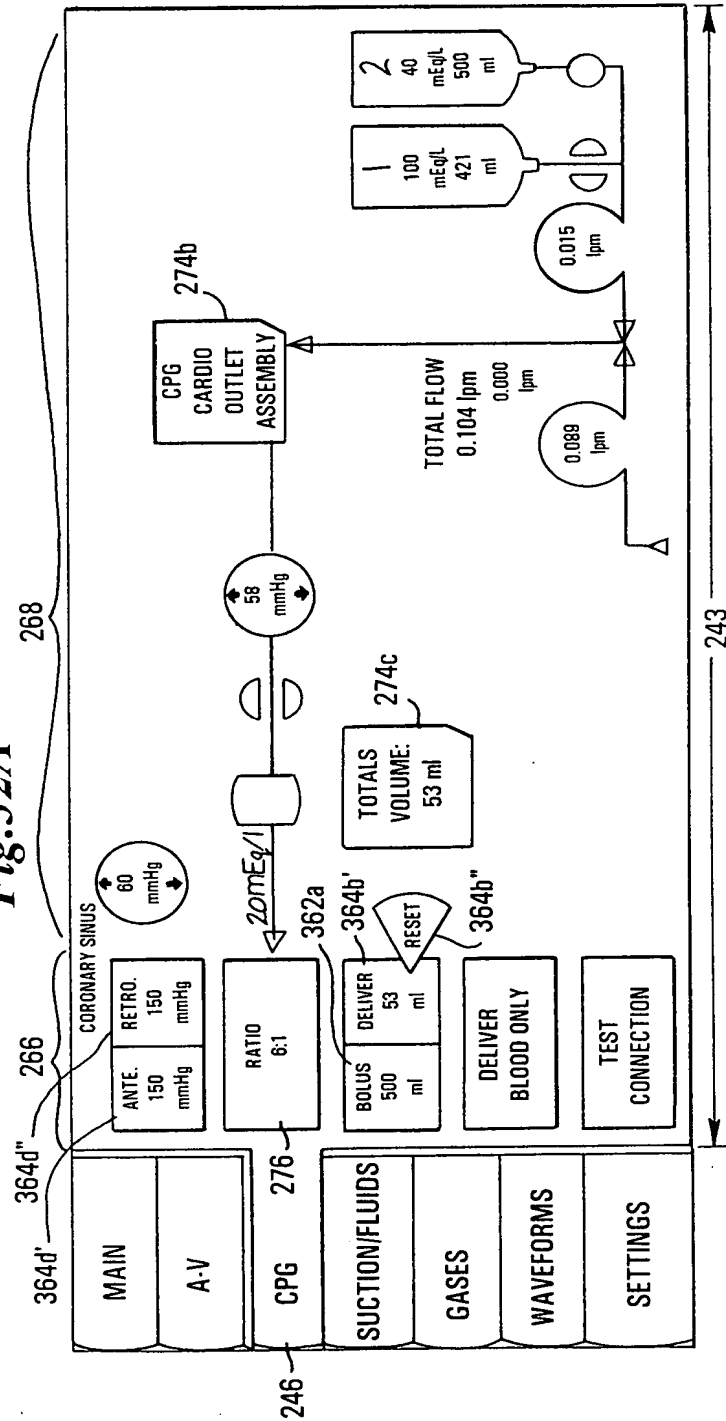


Fig.32B

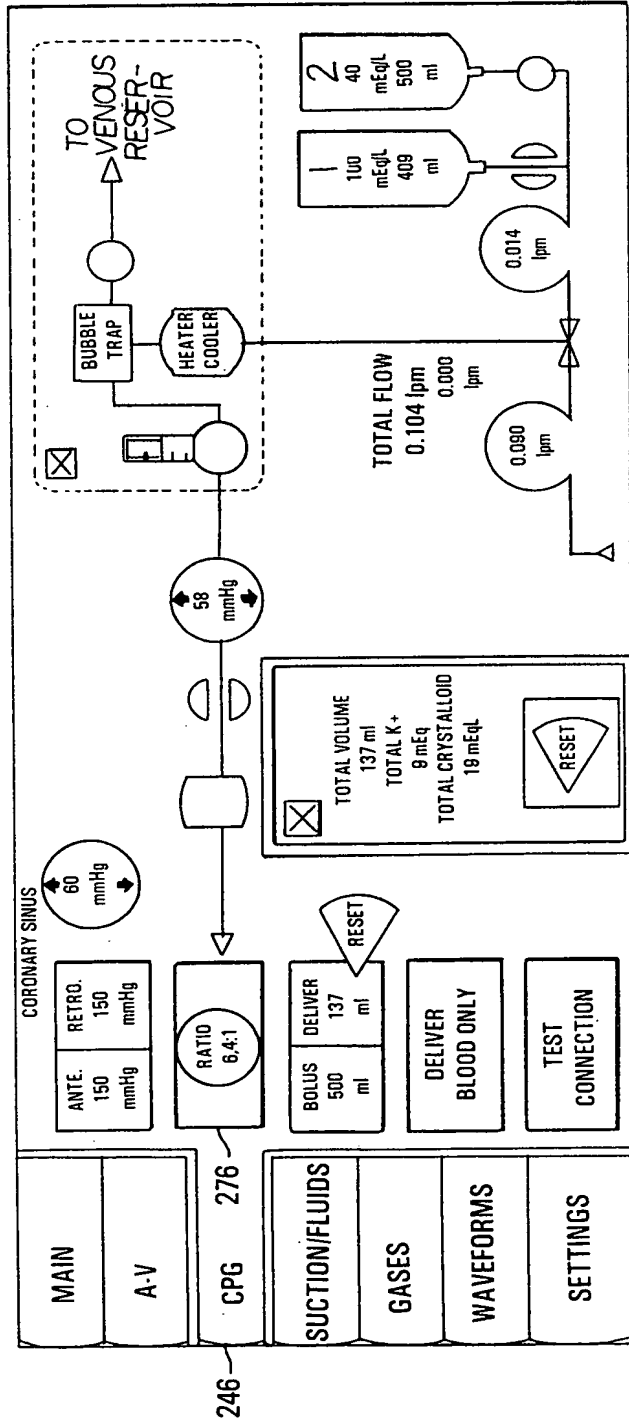


Fig.32C

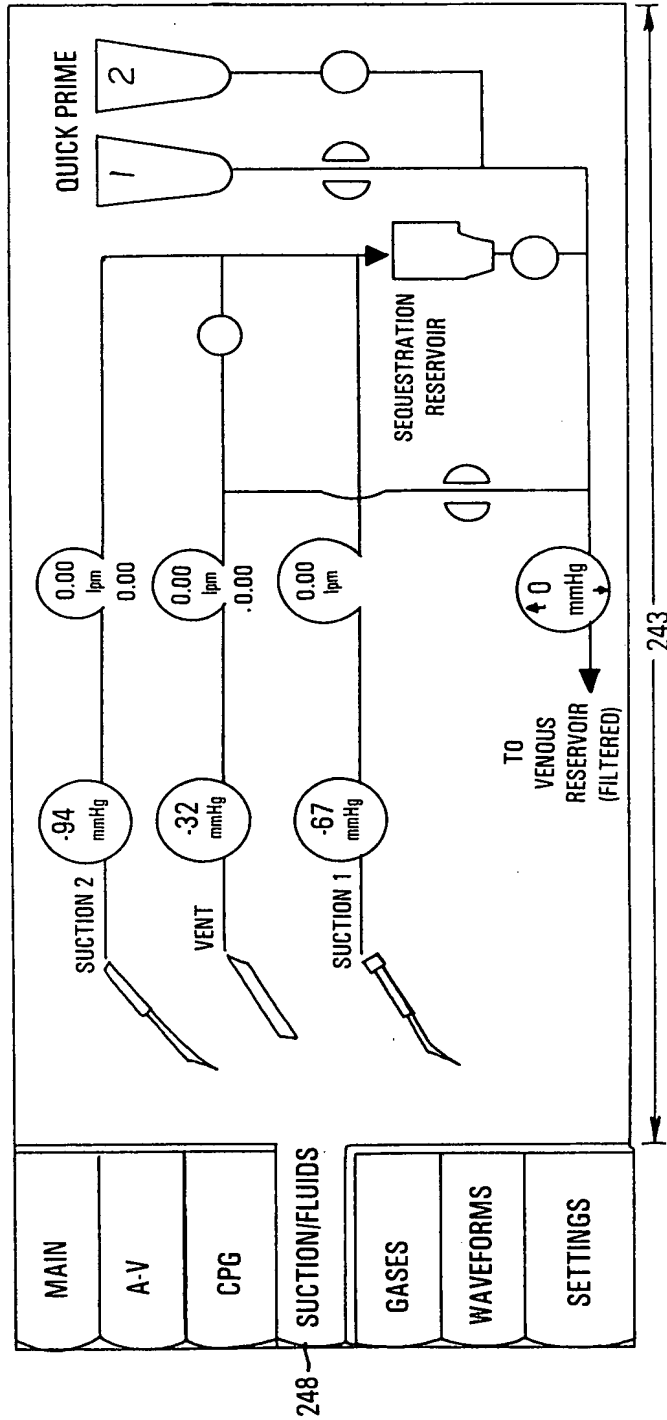


Fig. 32D

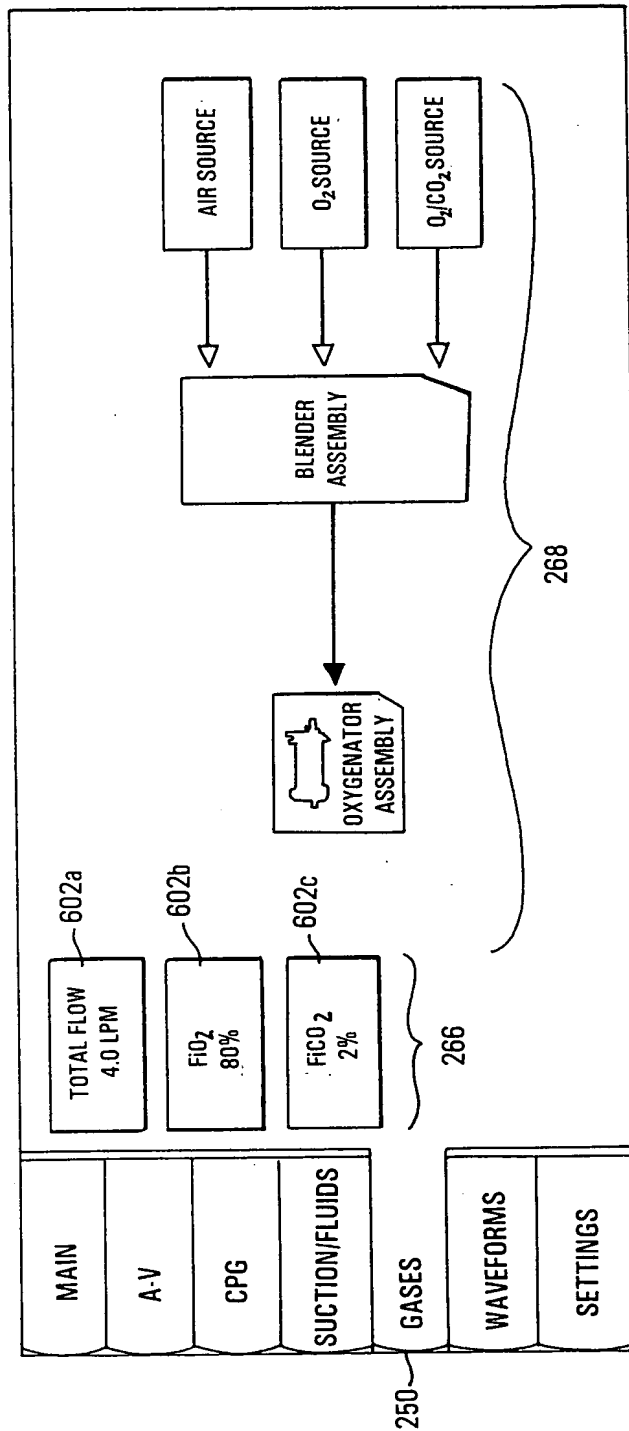


Fig. 32E

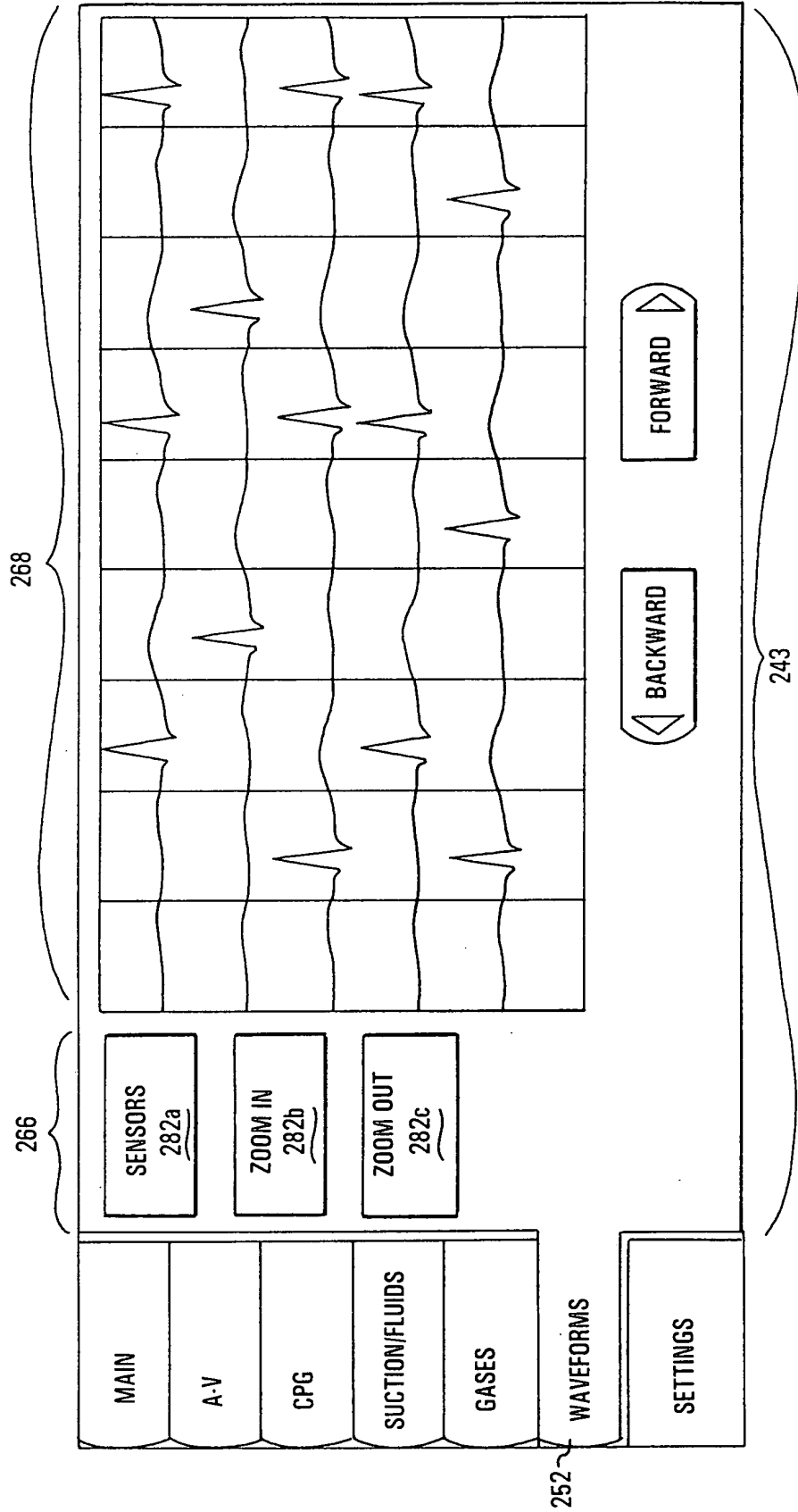


Fig. 33A

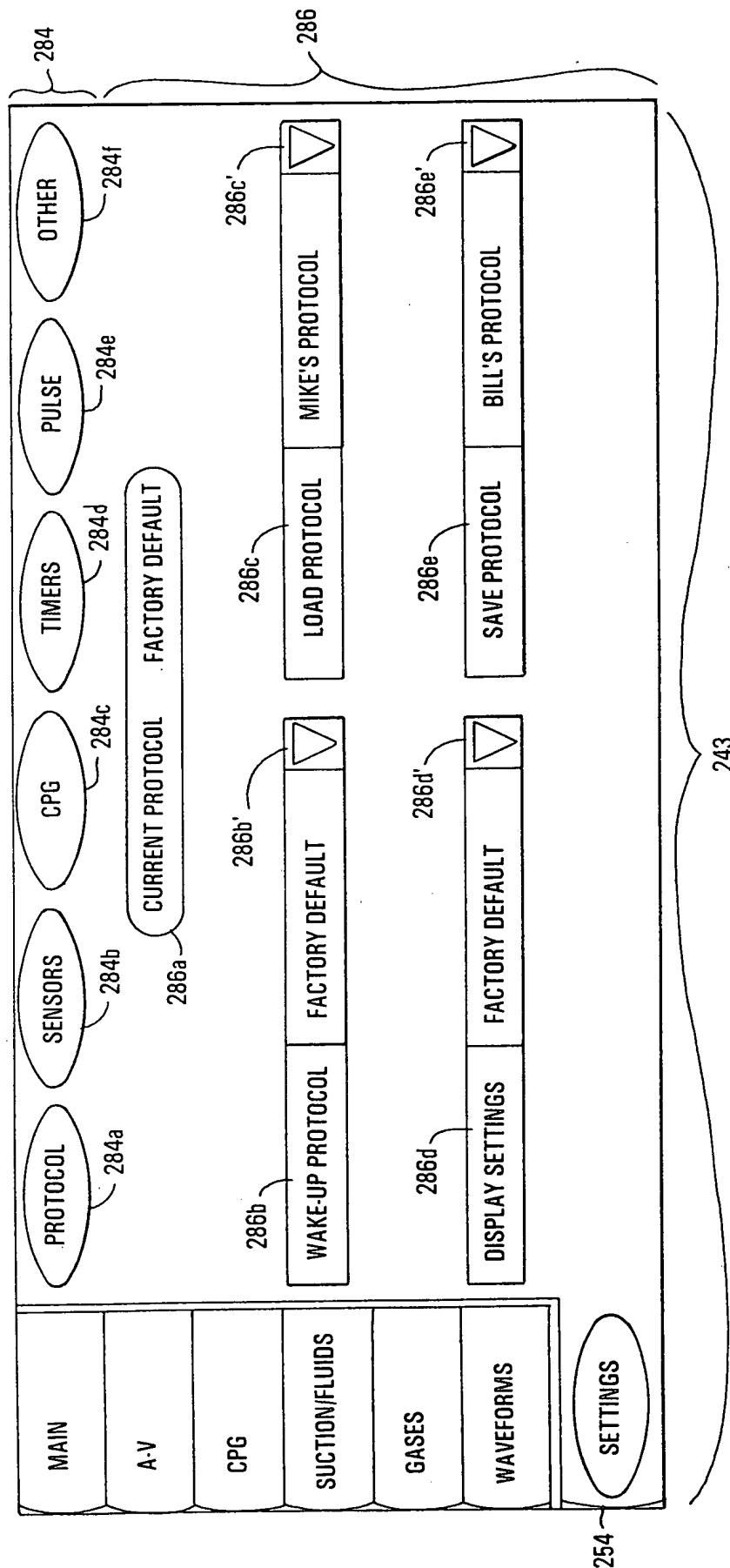


Fig.33B

MAIN

A-V

CPG

SUCTION/FLUIDS

GASES

WAVEFORMS

SETTINGS

PROTOCOL

SENSORS

CPG

TIMERS

PULSE

OTHER

AIR DETECTORS

BUBBLE SENSOR 1

BLENDER/GAS

BLENDER

PRESSURE SENSORS

ARTERIAL LINE

TEMP. SENSORS

VENOUS

LEVEL DETECTORS

CONTINUOUS SENSOR

SAT/HCT

WARNING LIMITS

Fig.33C

AIR DETECTORS

BUBBLE SENSOR 1

BUBBLE SENSOR 1

BUBBLE SENSOR 2

CPG BUBBLE DETECTOR

Fig. 33D

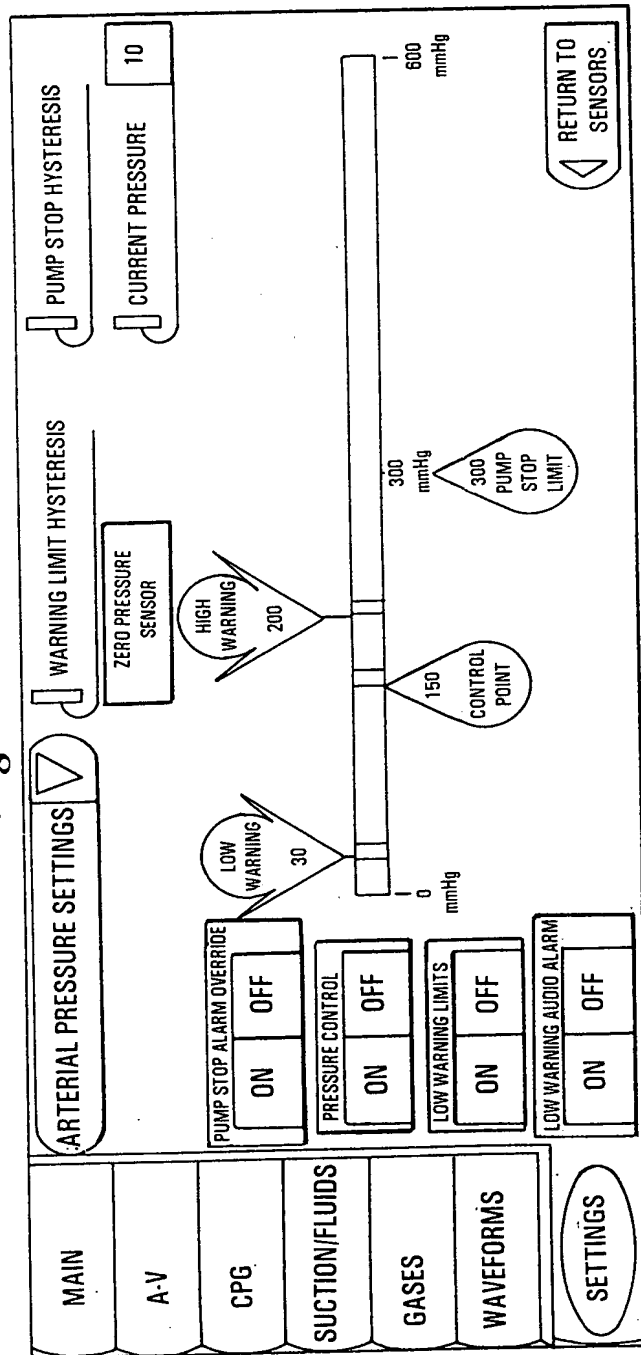


Fig. 33E

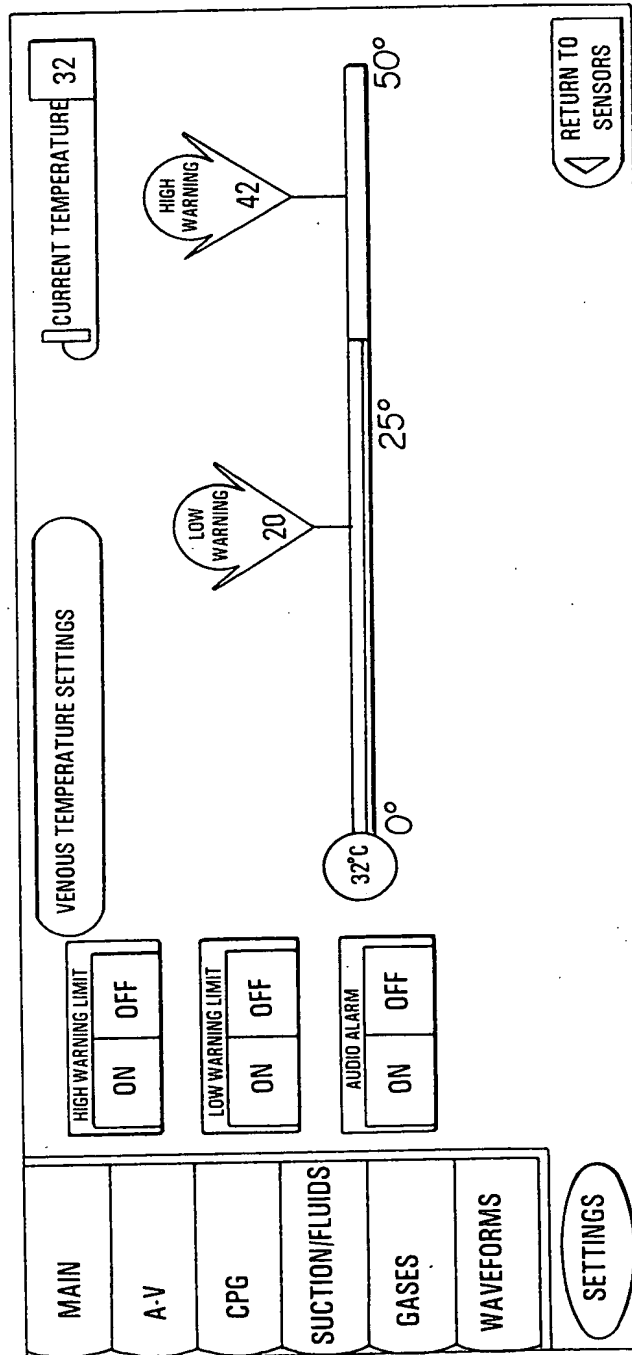


Fig. 33F

| | PROTOCOL | SENSORS | CPG | TIMERS | PULSE | OTHER |
|----------------|---------------------------------|---|---|---|-----------------------|-------------------------------|
| A-V | BAG LOW WARNING ALARM ON OFF | SELECT & MODIFY BAG PRESETS | BAG 1 PRESET 1 | 500 ml 100 mEq/L MODIFY | PRESET 3 | 500 ml 100 mEq/L MODIFY |
| CPG | BAG LOW AUDIO ALARM ON OFF | | BAG 2 PRESET 2 | 500 ml 100 mEq/L MODIFY | PRESET 4 | 500 ml 100 mEq/L MODIFY |
| SUCTION/FLUIDS | BAG EMPTY PUMP STOP ON OFF | | CONFIGURE BOLUS MODE VOLUME 500 UP DOWN | | | |
| GASES | K+ HIGH WARNING ALARM ON OFF | | | | | |
| WAVEFORMS | K+ HIGH AUDIO ALARM ON OFF | SELECT BAG FROM WHICH TO DELIVER 1 2 | | ANTEGRADE CRYSTALLOID BLOOD/CRYST. ONLY | RETROGRADE RATIOED | |
| SETTINGS | | | | | | |